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ABSTRACT

This document summarizes the key data and main findings of the book, "The Economic Consequences of Immigration into the United States." All immigrants, not only those who are illegal, are included in the discussion. Immigrants, it is concluded, raise the standard of living of the residents of the host country, rather than lowering it as is popularly supposed. The negative impact of immigrants is largely through the use of schools, hospitals, and public housing. However, immigrants pay more in taxes than the cost of the welfare services and schooling that they use--every year an average immigrant family puts about $1,500 into the pockets of natives. The report includes an introduction and conclusion, and seven chapters: (1) "Welfare, Taxes, and the Public Coffers"; (2) "Effects Through the Use of Capital"; (3) "Effects on Natural Resources and the Environment"; (4) "Labor Market Effects of Immigration"; (5) "Effects on Economic Productivity and Knowledge"; (6) "Overall Effects of More People on the Standard of Living"; and (7) "Income Distribution, Effects on Other Countries, and Additional Remarks." (CG)

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How do Immigrants Affect Us Economically?

by Julian L. Simon

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Executive Summary

HOW DO IMMIGRANTS AFFECT US ECONOMICALLY?

by

Julian L. Simon

This paper summarizes the key data and main findings of a just-completed book, The Economic Consequences of Immigration into the United States, which will be published at the end of the year.

The main conclusion is that, contrary to popular belief, immigrants raise our standard of living, rather than lower it.

The subject is all immigrants rather than just illegals, because illegals are not a large fraction of total immigration -- perhaps only a fourth, at present.

Contrary to popular belief, immigration is currently low rather than high, by historical standards. This was true even in the recent peak year of 1980. The yearly flow nowadays is only about a sixth as large, relative to our population, as it was around the turn of the century.

The United States is not being flooded with illegal Mexican immigrants. The Census Bureau estimates that net illegal immigration is only about 200,000 or 250,000 persons per year. The number of Mexicans illegally in the U. S. who intend to remain permanently is only about 1.3 million, not a large number by any measure.

A major survey done by the Census Bureau, and analysed by the author, shows that immigrants pay much more in taxes than the cost of the welfare services and schooling that they use. This is because they come when they are young and strong, and because a

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high proportion are well-educated and have high earnings. Every year, an average immigrant family puts about $1,500 into the pockets of natives from this excess of taxes over public costs.

Furthermore, study after study shows that illegal immigrants use only very small amounts of public services. And the taxes they pay are perhaps five or ten times the cost of the services that they do use.

Immigrants have a negative impact upon natives through the use of public "demographic" capital such as schools, hospitals, and public housing. To a considerable extent this capital is on a "pay as you go" system, paid for by borrowing with bonds, of which immigrants pay their share. The negative effect is about one-fifth the size of the positive effect on natives through the tax-and-transfer balance mentioned above.

Immigrants do not have a negative effect by diluting production capital except for the small number of immigrants who work in the government, because the returns to capital are raised by immigrants slightly more than the returns to labor are lowered. And because the ownership of capital is widely diffused in the United States, to a considerable extent through pension funds, there is not likely to be an important negative redistribution effect from poor to rich.

Immigrants have no observable negative effect upon unemployment. This is mainly because they not only take jobs, but through their spent earnings, they make as many jobs as they take. They also make additional new jobs with the new businesses that so many of them open.

Immigrants raise productivity, because they increase the volume of goods and services produced, which results in learning how to produce more efficiently. They also improve productivity with the new scientific and technical ideas that they invent.

In the long run immigrants make natural resources more available rather than more scarce, as the history of declining real prices of food and other raw materials shows.

A simulation model using simple standard economic thoery, together with an allowance for the effects of immigrants on welfare expenditures and taxes, and upon productivity, indicates that the short-run negative effect upon the standard of living is small or non-existent, whereas the immigrants quickly make positive and large contributions to natives' incomes. Assessed as one would assess other social investment decisions, the rate of return to natives from the "investment" of admitting immigrants is very large by any measure.

Immigrants are not huddled tired masses. They are not the wretched refuse of foreign shores. Instead, they are, on average, in the early prime of their work lives. In fact, a much larger proportion of new immigrants than of the native labor force work in professional and technical occupations such as medicine and engineering. Hence immigrants create additional complementary jobs for our own unskilled workers, and put more money into their pockets. Immigrants also tend to be strong, courageous, vigorous, entrepreneurial types who enrich our economy and civilization with their drive and creative powers -- which is the very success story of America.

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CENTER FOR IMMIGRATION POLICY
AND REFUGEE ASSISTANCE

TELEX: 64574

Dear Reader:

The Center for Immigration Policy and Refugee Assistance (CIPRA) of Georgetown University has taken the initiative in bringing together several organizations to sponsor publication of a new report by Julian Simon entitled, "How Do Immigrants Affect Us Economically?" which we believe merits your attention.

By cooperating in the publication of this monograph, we hope to contribute to the ongoing discussion of immigration reform in the Congress and among interested organizations and individuals.

Because the paper discusses the impact of immigrants upon our economic welfare, it may be useful in the revision of current legislation affecting immigration. Also, the paper focuses on one of the most important long-run issues in the debate--the number of refugees and other immigrants the United States will admit.

Owing to the diversity of the groups cooperating in this effort, the undersigned do not necessarily agree with all the statements and conclusions in this report, but believe all relevant information deserves to be aired.

Sincerely yours,

Center for Immigration Policy and Refugee Assistance

American Immigration Lawyers Association

American Jewish Committee

Cato Institute

Hebrew Immigrant Aid Society

Immigration and Refugee Program, Church World Service

Lutheran Immigration and Refugee Service

Migration and Refugee Service, U.S. Catholic Conference

National Council of La Raza

U.S. Committee for Refugees

ACKNOWLEDGMENTS

This essay represents the first fruits of a longer and more technical work on the same general subject now almost complete. The issue of immigration is currently at a critical point in public policy, and it seems appropriate to publish this short treatment in an attempt to have these findings and views, many of them contrary to conventional wisdom, enter into the debate. This essay focuses on the broad central ideas and omits the new theoretical tools and empirical analysis developed in the longer work, though the results are given here.

The essay draws upon various of my previous short writings about immigration, as well as my more general *The Ultimate Resource*. I have not indicated which material has been previously in print, in the belief that this would be only an inconvenience to the general reader.

I am grateful for assistance of various kinds rendered by Helen Demarest, Stephen Moore, Daniel Simon, and Rita Simon. I appreciate financial support from the Sloan Foundation and moral support from Sloan's Albert Rees and Arthur Singer. And I am delighted that the book from which this paper is drawn is a part of the publications program of the Manhattan Institute for Policy Research.

I also want to thank the Center for Immigration Policy and Refugee Assistance for bringing this paper out in timely fashion.

I hope that you find the essay useful.

Julian L. Simon

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IX. CONCLUSION

I. INTRODUCTION

Immigration has always aroused passions in the United States. Even before the independence of this nation, some natives and earlier immigrants inveighed against admitting "alien influences" to these shores. A recent study of public opinion toward immigration in the past century by R. Simon shows public opinion to have been hostile toward immigration at almost all times.[1]

Americans take particular interest in immigration now for a variety of reasons. This interest was magnified by the deliberations of the Select Commission on Immigration and Refugee Policy, which led to the debate over the Simpson-Mazzoli bill in the 98th Congress. At the time of this writing the bill is scheduled to be considered by the new Congress. The bill failed to pass by the slightest of political margins, and it is likely to generate just as much controversy this time around. Casual observation suggests that the topic was addressed in at least as many editorials in the Washington Post and the New York Times as any other single topic during the 1983-84 session of Congress, confirming that the subject is not likely to disappear soon from the political agenda unless there is some major legislative action.

Whereas the objections to immigration expressed in past years often were simply the crude bigotry of race and religion, the objections heard now are mostly economic. The underlying force may still be mainly race and religion. Yet those in favor of immigration ought to address the economic issues in order to engage in honest dialogue with those whose objections are truly economic, as well as to try to cut the ground from under those who cloak their real feelings against immigration in economic guise.

It is not clear why immigration is a salient issue now. Some possible contributory factors are these: (1) Americans' mood about their economic situation is less rosy than in some other periods since World War II. The idea that immigrants take jobs from natives seems particularly unpleasant in such a period. (2) Environmental organizations — worried about the effects of more persons upon the environment and upon the supply of natural resources — have joined forces with anti-population-growth organizations (such as Zero Population Growth and Negative Population Growth and the Environmental Fund) and with special-interest anti-immigration organizations (such as the Federation for American Immigration Reform, FAIR) in an umbrella organization called Global Tomorrow Coalition. The combined weight of these organizations, with their membership of more than five million, constitutes a big body of anti-immigration sentiment. (3) The unusually large and dramatic waves of refugees in recent years from Vietnam, Haiti, and Cuba have drawn much attention to immigration. Native Americans seem to have been less sympathetic to these refugees than to refugees from Hungary and Czechoslovakia in the 1950's and 1960's. (4) Congress has not passed a comprehensive immigration law since 1965. The anachronisms and law-bending complications that inevitably accumulate with time have become troublesome, suggesting that a "reform" might be timely. (5) The absolute number of immigrants arriving has been greater recently than at any time since the 1920s, though the absorption burden represented by immigrants as a proportion of total population, even at the recent peak, is perhaps only a sixth of the peak around the turn of the century. (6) The racial composition of immigrants has shifted, due in considerable part to the 1965 law, and now includes more Orientals, more Mexicans (legal and illegal), and fewer Europeans.

The following excerpt from a nationally-syndicated column, based on an interview with the then-director of the U.S. Immigration and Naturalization Service, Leonard Chapman, seems to sum up the common U.S. view about the effects of immigrants. I will use elements from this excerpt as convenient pegs upon which to hang subsequent discussion. Chapman's case is stated with respect to illegal immigrants who, because of their pariah status, act as lightning rods for the bolts aimed at all immigrants. But his objections to illegal immigrants are much the same as those commonly made to legal immigrants. Of course there are many Americans in and out of public office who hold quite different opinions. And some would distinguish the effects of illegals from legal immigrants. Yet Chapman's view seems to be widely held:[2]

> American union leaders say the illegals are taking jobs from citizens or at least keeping the standards of such jobs so low that citizens refuse to accept them.
>
> The Internal Revenue Service is increasingly angry because most illegals pay no taxes.
>
> And the U.S. Immigration and Naturalization Bureau is "sick and tired" of committing large numbers of its relatively small force to playing games of cat-and-mouse for no good or non-appreciated end...
>
> Says Chapman: "The numbers are large enough to constitute a severe drain on our society."
>
> He is correct. For the most part, illegal aliens are not wanderlust characters but job seekers who invariably send home whatever money they earn.
>
> Thus, not only do their actions deplete America's already critical job market (at least 5 million U.S. citizens are unemployed), but according to Chapman, "also account for much of our overseas money loss."
>
> Then, too, when the illegals can't find work they go on welfare. Chapman says, "We spend millions every month supporting people who are not supposed to be here at all."

Before we discuss each of these complex and difficult issues, three general points need to be made. First, the welfare of U.S. citizens is the primary interest of this monograph. The welfare of the citizens of countries sending immigrants to the U.S., and the welfare of the world as a whole, are of secondary interest here. Second, though the standard of living of U.S. citizens as a whole is my main focus, I shall also attend to the special problems of occupational groups that are especially affected by immigration. And third, I shall pay attention to the long-run effects of immigration—five, ten, twenty years and even longer into the future--as well as the short-run effects in this year and the next two or three years.

Before beginning, we need data on the magnitude of current immigration to help us understand the dimensions of the contemporary immigration situation, and of the extent to which it is misstated. FAIR says, "Immigration to the United States is at record levels."[3] Figure I-1 shows the absolute numbers of legal immigrants over the decades. Only in 1980, when an exceptionally large number of refugees arrived, were the numbers of legal immigrants even two-thirds of peak years way back. And the recent numbers as a whole clearly are far smaller than the numbers around the turn of the century. Nor does the inclusion of illegal immigrants alter this conclusion, as we shall see shortly.

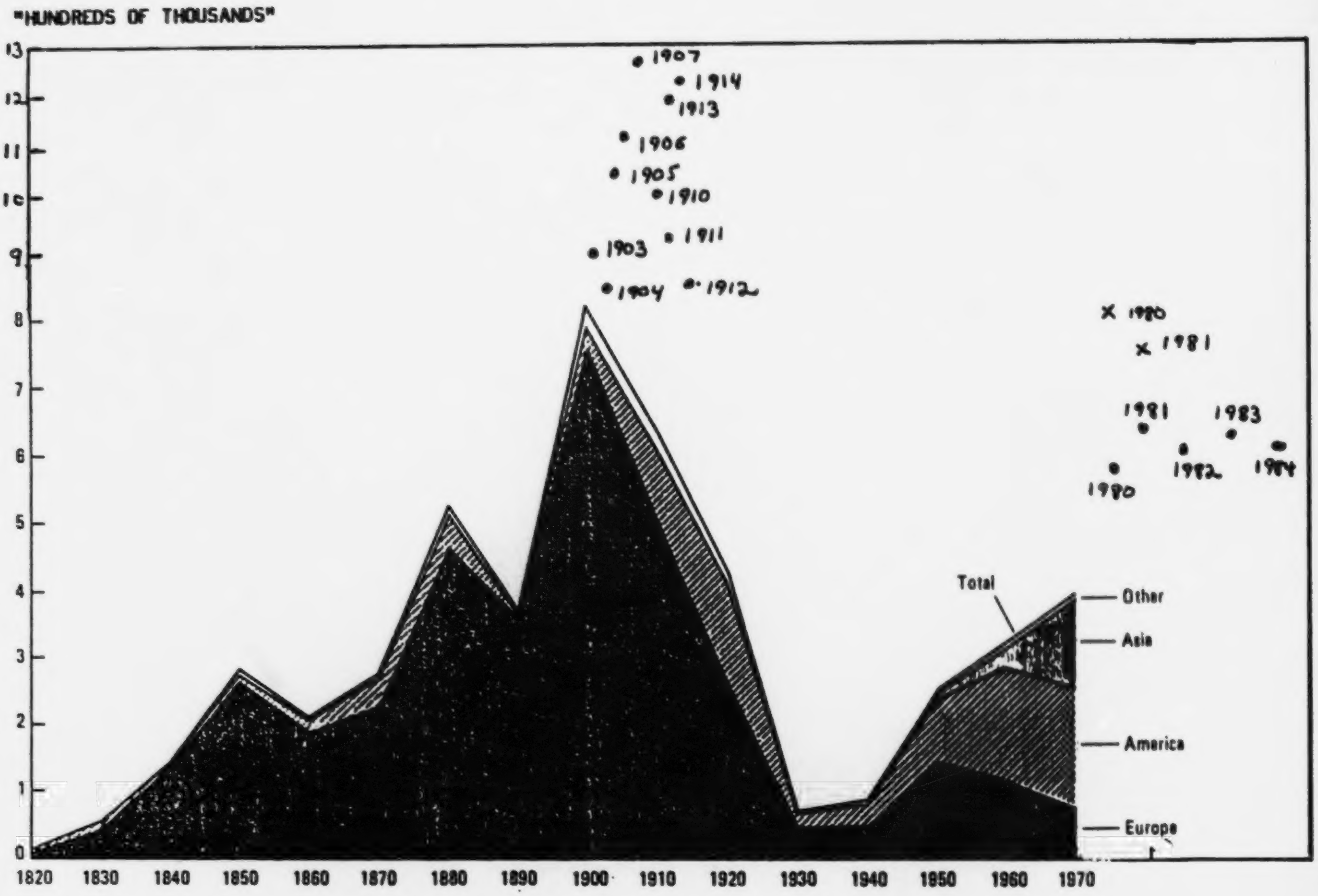
FIGURE I-1

From the point of view of the economic impact on natives, more appropriate than these absolute numbers is the volume of immigration as a proportion of the native population. As shown in Figure I-2, the immigrants who arrived between 1901 and 1910 constituted 9.6 percent of the population, whereas between 1961 and 1970 immigrants constituted only 1.6 percent of the population. So the recent flow is less than a sixth as heavy a burden for the native population to absorb as it was in that earlier period.

FIGURE I-1

ANNUAL NUMBER OF IMMIGRANTS PER DECADE, BY CONTINENT, 1820-1979,

PLUS TEN HIGHEST INDIVIDUAL YEARS, AND INDIVIDUAL YEARS SINCE 1980



Sources: Pre 1979 Data Statistical Abstract, 1981, p. 85.

- ● INS Estimates

- x Select commission projections, less accurate than INS data.

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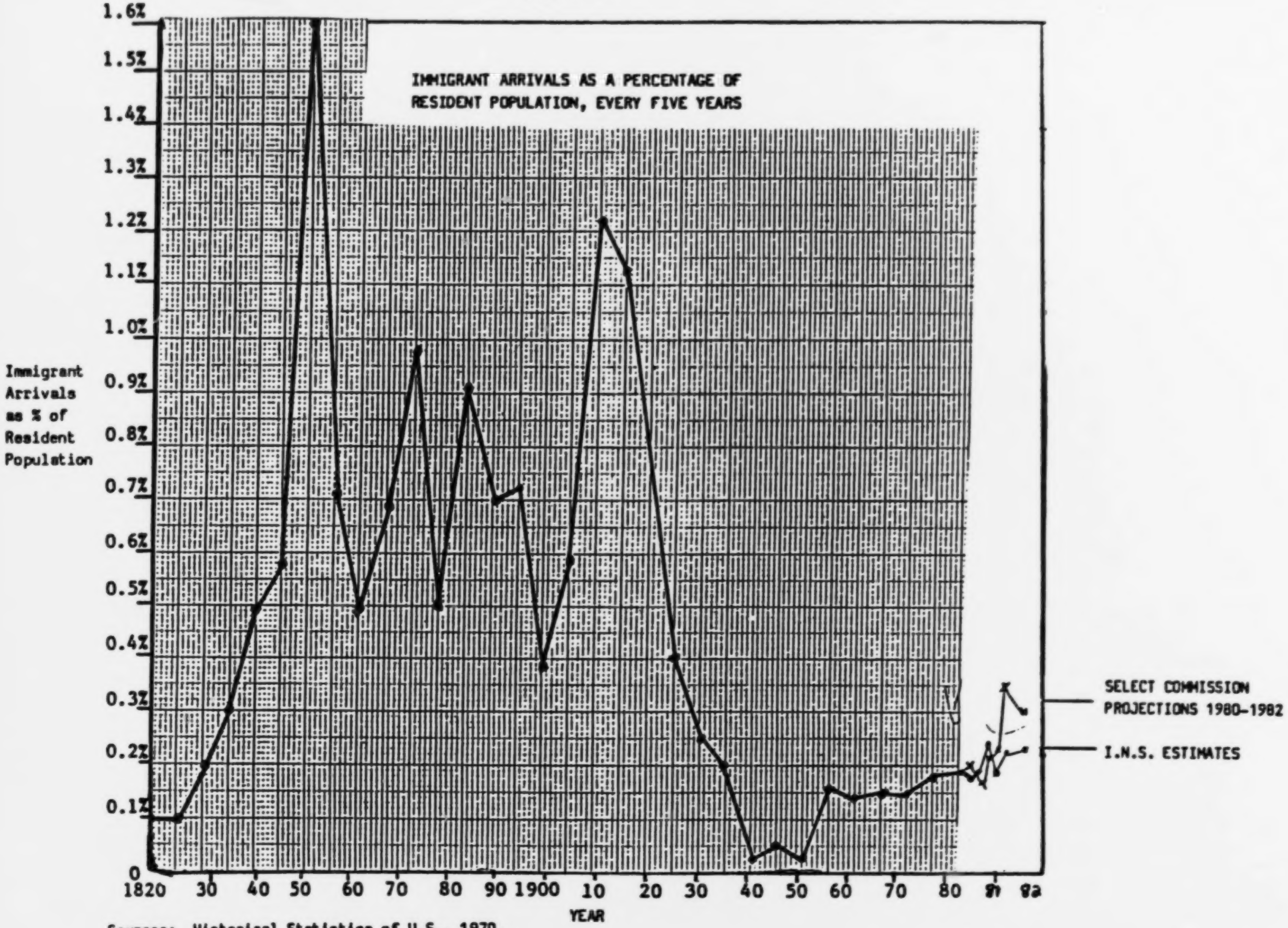
FIGURE I-2

Another way to think about the matter: In 1910, 14.6 percent of the population was foreign born. In 1980, only 6% of the population was born abroad. Not only is the present stock of immigrants only about a third as great proportionally as it was earlier, but it also is a small proportion considered by itself. About 1 person in 20 in the U.S. now was born abroad, including those who arrived many years ago. We tend to think of ourselves as a "nation of immigrants," but the U.S. has a smaller share of foreign-born persons than do many countries that we tend to think of as closed homogeneous populations--including Switzerland, France, Great Britain, and even Sweden.

The anti-immigration groups cannot dispute these numbers, because they all come from standard sources. But those groups suggest that illegal immigration is so large as to make meaningful the claim that immigration is at a record level in absolute terms (though they never challenge the proposition that as a proportion of the native population, immigration is at a far lower level now than it has been earlier.)

By now, demographers have a quite solid understanding of how many illegals are in the U.S. At the request of the Select Commission, a blue-ribbon team of demographers from the Bureau of the Census surveyed the wide variety of studies that have been done, and concluded, "The total number of illegal residents in the United States for some recent year, such as 1978, is almost certainly below 6.0 million, and maybe substantially less, possibly only 3.5 to 5.0 million."[4] As to Mexicans, they estimate that there are "almost certainly less than 3.0 million, and may be substantially less, possibly only 1.5 to 2.5 million."[5] Furthermore, of the Mexicans illegally in the United States at any given time, a

FIGURE I-2



Sources: Historical Statistics of U.S., 1970.
Statistical Abstract of U.S., 1981.

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large proportion are here for a matter of months and then return voluntarily.

The anti-immigration groups justify their claim that total immigration is at record levels by assertions about the rate of illegal immigration. For example, FAIR says that "illegal immigration is estimated to add 800,000 to one million more [immigrants] every year."[6] It is quite obvious that so large a yearly flow of immigrants — 800,000 to one million -- is quite inconsistent with the Census Bureau's estimate of the existing total stock of 3.5-5.0 million illegals. And based on the earlier studies plus more recent studies done by himself and others, Jeffrey Passell — part of the original blue ribbon team, and the Census Bureau official responsible for estimating illegal flows -- uses the numbers 200,000 or 250,000 net illegal immigrants per year.[7] Adding 200,000 or even 250,000 illegals to the known number of legals in figure I-1 indicates that even with adjustments, immigration is nowhere near record levels even in absolute numbers.

II. WELFARE, TAXES, AND THE PUBLIC COFFERS

This chapter takes up the charge that immigrants are a burden upon natives because they use large amounts of public services which cost more than the immigrants pay into the public coffers through their tax contributions. I shall first review the extent to which immigrants use public services, then estimate their tax contributions, and lastly, compute the net balance. We shall find that the tax contributions of legal immigrants are considerably greater than the cost of the services they use. For illegal immigrants, the excess is even greater proportionally, because illegals generally are unable to use public services though most of them pay income and social security taxes.

As in other chapters to come, evidence will be adduced not only for the United States but also for other such major immigrant-receiving countries as Canada, Australia, Great Britain, and Israel. The original reason for this, dating back to my first attempt to survey the field in the late 1970's, was that data for the United States were in extraordinarily short supply, and it seemed reasonable to glean whatever insights were available from similar situations abroad. Since then, the situation has improved markedly with respect to U.S. data (though there has been less new material from the other countries, which partly accounts for the slightly antique air about those data). The considerable corroboration provided by data from abroad (though it is not invariable) lends additional credence to the United States data and therefore continues to make these foreign data valuable.

Amounts and Costs of Social Services Used by Immigrants

"[W]hen the illegals can't find work they go on welfare." So goes the common assumption. And quite the same charge is made against legal immigrants.

If immigrants were to use larger amounts of social services than their taxes cover, they would drain the community to an extent that might offset their contribution in producing goods and services. To examine the question of whether this is in fact the case, I will first present short analyses of available data for Canada, Great Britain, and Israel. Then will come discussion of an extensive analysis of excellent data for the United States. All this material shows the same surprising result--*immigrants use relatively little public services*.

Canada. Evidence on poverty among immigrant families is relevant because families in poverty use welfare services. With respect to the Canadian-defined "poverty line" income, a slightly higher proportion of immigrants than of non-immigrants--22 percent to 21 percent--were below the line at the end of the immigrants'[3] first year in Canada. But by the end of the second and third years, only 5 percent and 4 percent of the immigrants were below the poverty line--compared with 21 percent among all Canadians.[1]

Also important is the very low proportion of immigrants in or near the retirement age--1 percent or less are sixty-five or over, and less than 5 percent are fifty and over.[2] This finding suggests a very low present and future burden on retirement pension funds.

Great Britain. Because there are relatively fewer immigrants than natives of retirement age, immigrants receive much less in retirement pensions than do natives, and pensions are the largest item in the cost of national insurance and assistance benefits.[3] The latter are, in turn, the biggest share of social service expenses. In other categories, expenditures per head for immigrants are much the same as for natives.[4] Thus, immigrants are not relatively heavy users of welfare services but, rather, are relatively light users of welfare services.

Israel. The case of Israel[5] is quite atypical with respect to the supply of social services to immigrants, for several reasons. First, the immigrants to Israel from the Soviet Union and elsewhere move largely for non-economic reasons, in contrast to most migrants elsewhere in the world. Second, the social services supplied--housing subsidies, special rights for the importation of autos and other goods, and acclimatization services--are quite large (though not as large as most Israelis believe) and they are hard to estimate because they vary considerably across immigrants. Third, foreign charitable contributions more than cover the costs of these social services, so they do not affect those already residing in Israel.

United States. In 1976 the Census Bureau surveyed 156,000 households (including about 15,000 mostly legal immigrant families) to learn about 1975 family income and welfare services. From this sample--by far the best for its purpose that has ever been assembled anywhere--I constructed a picture of lifetime economic behavior by assuming that the information on immigrants who had been here, say, two years as of 1975 describes the representative immigrant family after two years, those here ten years in 1975 stand for the tenth year in the U.S. of a representative family, and so on.

The services that most often catch the public eye are welfare and Supplemental Security payments, unemployment compensation, aid to families with dependent children, and food stamps. The average native-born U. S. family received $498 from these program in 1975. (The calculations include families getting no assistance.) The average for immigrant families that arrived between 1950 and 1974 was $548. Not much difference.

Retirement programs bulk larger. Native U. S. families on average received $735 for Social Security, $167 for Medicare and $20 for Medicaid, a total of $922. Immigrant families received a total of $92 during the first five years in the U. S., $227 the second five years, $435 the third five years, and $520 the fourth and fifth five-year periods. The difference in favor of natives is large. The reason immigrants get less Social Security and Medicare is simply because of their youthfulness. As with groups of immigrants arriving in all countries throughout history, those coming to the U. S. tend to be young, strong, and often unmarried.

Providing school for immigrant children during an average family's first five years in the United States costs slightly less than the $859 spent for the average native family, because immigrants tend to come before family completion. After that, expenditures on immigrants are higher, rising from $1,068 to $1,237 during the next fifteen years. (The difference is not because immigrants have many children, but because the average native family is older, with a large proportion of children no longer in school.)

By summing the figures, we find that the average immigrant family receives

$1,404 in welfare services in years 1-5, $1,941 in years 6-10, $2,247 in years 11-15, and $2,279 in years 16-25. Natives average $2,279, considerably more than the immigrants get during their early years in the U. S. These early years are more relevant than are later years because rational policy decisions weigh the distant future less heavily than the near future, for exactly the same reasons that a dollar in hand is worth more to us now than a dollar that will be in hand ten years from now: the philosophy of the matter may be murky, but the practice is standard and clearcut.

But what about Social Security when immigrants grow older? The answer depends not upon entitlements or legal obligations, but upon the flow of real resources from workers to retirees. The children of retired immigrants support them with their taxes, just as the children of natives do for their parents, so the retired immigrants are no special burden upon natives.

The importance of the immigrants' contributions to Social Security is very great compared to all their other effects upon natives through the public coffers. If there is any one single factor that cramps the U. S. government in its economic policies right now, it is old-age payments through Social Security and other federal government pension plans, along with other assistance to the aged. It is largely because these programs seemingly cannot be reduced that the federal government has such trouble closing the gap between tax revenues and the budget. And it is largely because of old-age assistance programs that states and cities are having trouble (for example, supporting education) even though the population that is of student age is relatively much smaller than it was in the past. Old-age funding is at the root of the difficulties in which schools and universities now find themselves.

Longer life increases the burden of old people on workers. But so far as I can judge, the greater cause seems to be changes in the birth rate. Throughout most of our history, we produced ever-larger numbers of people in each cohort than in the cohorts that went before, and therefore, the proportion of persons in the working ages to the retired persons they were supporting was favorable. But the fall in the birth rate changed all that.

The situation cannot be changed with native demography alone. We will not cease to try to lengthen life. And even if we could induce people to have more babies--which the U.S. certainly will not try to do--the effects could not be felt within several decades, too far into the future to reduce our present problem. Such countries as West Germany, France, and Sweden face quite the same situation; it is built into the structure of our societies, rather than caused solely by inept policies.

Concerning illegal aliens, now, the evidence is clear and strong that they do not use welfare services, both because they are young and strong, and also because they cannot use such services without fear of the law. For example, in a survey by North and Houston,[6] of illegal aliens in detention camps the findings are as follows:

Used free public hospital or clinic services less than	5.0%
Collected one or more weeks of unemployment insurance	3.9%
Have children in U.S. schools	3.7%
Participated in U.S.-funded job training programs	1.4%
Secured food stamps	1.3%
Secured welfare payments	0.5%

Despite claims to the contrary by the Federation for American Immigration Reform (FAIR), these figures were and are representative.

Conclusion. The data from the "normal" cases--Britain, Canada, and the United States--suggest that immigrants use a below-average quantity of services, largely because of the "favorable" age and sex composition of the immigrant groups.

Taxes Paid by Immigrants

"The Internal Revenue Service is increasingly angry because most illegals pay no taxes." I know of no evidence that the IRS is "angry," and it would be nonsensical if they were. Nevertheless, let us treat this newspaper assertion as if it represents the conventional point of view.

More important than whether immigrants do or do not pay taxes is the amount of taxes paid, and especially the amount of taxes paid by legal immigrants, since they use much more social services than do illegal immigrants. The key issue is the relationship between public services used, and public services paid for, by immigrants. If we are to know whether immigrants' tax contributions outweigh their use of public services, we must have an idea of how much they pay in taxes.

Before addressing the U.S. data, it is interesting to note that for Canada, the 1971 Census showed that foreign-born males earned considerably more than native males, on average (both mean and median) and in every age group; except for women over 55 years of age, the same is true of females. The tax payments that result from these higher incomes, together with the lower use of services by the immigrants, who include fewer retired persons and fewer in poverty, indicate a boon to native Canadians.[7]

The United States. The Census Bureau's SIE survey of 1976 (mentioned earlier) allows us to estimate the taxes paid by immigrants. Though we lack direct information on taxes paid, we can estimate tax payments tolerably well from data on family earnings.

Within 3 to 5 years after entry, immigrant family earnings reach and surpass earnings of the average native family due to the age-compositions of native and immigrant families. The average native family paid $3,008 in taxes in 1975. In comparison, immigrant families here 10 years paid $3,369, those here 11-15 years paid $3,564, and those here 16-25 years paid $3,592 — substantial differences benefiting natives.

Despite the fact that the illegal Mexican immigrants use almost no public services (except the time and energy of the Border Patrol), they do pay taxes. In the representative North and Houston survey, 73.2 percent of the aliens had federal income taxes withheld and 77.3 percent had Social Security insurance withheld (which the illegals will never collect).

Net Effect on the Public Coffers

If we know both the amounts of taxes paid by immigrants and the amounts of welfare services they use, we may then compute the net balance, positive or negative, for immigrants as a group. Additionally, we can then compare their impact on the public coffers with that of natives. I will now present these calculations for the U.S., based on the SIE survey.

Assuming that 20 percent of taxes finance activities that are little affected by population size (for example, maintaining the armed forces and the Statue of Liberty), the consolidated data on services used and taxes paid show substantial differences to the benefit of natives: an average of $1,354 yearly for the first five years the immigrant families are in the U.S., and $1,329, $1,525, and $1,383 for years 6-10, 11-15, and 16-25 respectively. These are the amounts that natives are enriched each year through the public coffers by each additional immigrant family on average. Evaluating the future stream of differences as one would evaluate a dam or a proposed harbor, the present value of an immigrant family discounted at 3 percent (inflation adjusted) was $20,000 in 1975 dollars, almost two years' average earnings for a native family; at 6 percent the present value is $15,000; and at 9 percent it is $12,000. (All these data are based upon the total stock of immigrants in the United States, without distinction as to whether they are legal or illegal. Illegals are likely to be underrepresented in the survey because of their reluctance to deal with public officials, but the Census Bureau has found that a large proportion of them do respond to such surveys. The underrepresentation is not likely to have a significant effect upon the overall calculations above, and, if anything, it is likely to cause an understatement in the benefit to natives, about which more below.)

Immigrants affect the standard of living of natives through other channels, too, and not all immigrant groups are alike. For example, the federal government pays $1,000 per person to resettlement organizations to cover overhead and start-up money for Vietnamese, Soviet Jewish, and other refugees. This expense and such costs as special refugee schooling should be deducted from the above present-value calculation for the average immigrant family. But it is unlikely that these deductions would make the calculation negative.

The recent study by Weintraub and Cardenas[8] of illegal aliens in Texas provides reliable evidence that the taxes paid by the immigrants greatly exceed the cost of services that they use. "Despite our biasing the costs upward and the revenues downward, tax revenues from undocumented aliens clearly exceed costs to provide public services to them."[9] They estimate the combined state and local costs and revenues attributable to the immigrant as follows: Cost--high estimate: $132 million; low estimate: $63 million. Revenue--high estimate: $286 million; low estimate: $162 million.[10]

But even these figures greatly understate the overall positive effect of these illegal immigrants upon natives, because they omit any consideration of the Social Security taxes paid to the federal government and they do not include 32% of their federal income taxes which does not return to the state. (The authors assume that 68% of federal income tax eventually comes back to the state.[11]) Also, these omitted quantities are large relative to the quantities included in their calculation; including them makes the low and high estimates of revenues--$359 million and $580 million respectively--that is, more than twice the state revenues alone. And the federal costs omitted from the Weintraub-Cardenas state calculations cannot be large, since food stamps is the only major federal welfare program used by illegal immigrants, they found. So the overall excess of government revenues over government costs caused by the illegal aliens is very great, in dollars as well as in percentage terms. The magnitude of the effect in dollars may be roughly assessed by observing that the average undocumented worker has more than $1,000 withheld in federal income and Social Security taxes,[12] the state and local taxes are roughly equal to the costs of all state services, and hence the amount of the federal taxes is pure gain to natives. The contributions to the public coffers on a household basis are even greater than $1,000, because there are two employed persons in a large proportion of households.

It may also be relevant that an overwhelmingly large proportion of costs for services used by the illegals--somewhere between 85% and 93%, according to Weintraub and Cardenas -- go for education. This should effectively demolish the myth that illegals come to the U.S. and immediately become leeches on the public by living off welfare and unemployment compensation. Even more direct evidence on this point is the low rate of unemployment among the illegals (1.3 percent[13]); the high rate of labor force participation among all adults, male and female (76 percent[14]); and the high rate of respondents holding two or more jobs (over 6 percent[15]).

In short, immigrants -- both legal and illegal -- contribute much more to the public coffers in taxes than they take out in transfer payments or other services.

III. EFFECTS THROUGH THE USE OF CAPITAL

This chapter deals mainly with the central objection to immigration — and indeed, the central objection to population growth. This objection was originally framed in the context of production capital, but more recently the same idea has had a new life with respect to the environment and natural resources (in which connection it will be discussed again in chapter IV).

Malthusian Diminishing Returns to Capital

The heart of the Malthusian theory is "capital dilution." This idea means that if additional workers are added to a community, output per worker will fall because there will be less capital for each worker to utilize. Malthus framed his discussion in an agricultural context where "capital" referred to land. And his theory became associated with "the law of diminishing returns." This is an idea that was floating around the intellectual world about Malthus' time (1766-1834), and was probably first stated clearly by French physiocrat economist Turgot (1727-1781). As every basic economics text labors to explain, however, this idea should not be thought of as a "law" at all. But because the notion is so marvelously simple, direct, and commonsensical, it has great seductive power, and it is wonderful grist for the family newspaper's mill. Unfortunately, the arguments that demonstrate the inapplicability of Malthusian capital dilution in the context of immigration are comparatively complex and indirect. As a consequence, journalists are likely to fear that the explanation is too taxing for their readers, and the field of discussion is therefore abandoned in favor of simple—though incorrect—Malthusianism.

One reason that simple Malthusian theorizing has very little application to immigration in a modern industrial country is that new workers who join a society do not immediately become equal-share owners of the community's capital, as is supposed by Malthus' theory. If the private sector of the economy were like the government sector--where there is no distinction between "owners" of productive capital and the persons who work with it, then workers' pay could be assumed to be equal to the full value of what they produce, with nothing left over for the owner of the capital; in that case, capital dilution would indeed cause average native income to be lower. But in the private sector additional workers imply higher earnings by owners about equal to the loss of earnings by other workers. This tradeoff leaves overall native per person income roughly unchanged. The logic of this bit of theory cannot easily be stated formally in this short space. So let us try to understand it with a little story instead.

A Counter-Malthusian Example

Consider an idealized farming "nation" composed entirely of a hundred identical farmers, each with the same amount and quality of farmland. They all work the same hours and produce the same output. Along comes a foreigner who offers himself as a laborer to the first farmer he meets. (For now, this is entirely a male community, with no other family members.) The farmer is willing to hire the foreigner as long as the wage will be even a bit less than the value of the increase in output that the foreigner produces. A shrewd bargainer, however, the farmer offers the foreigner considerably less. No less shrewd, the foreigner proceeds to offer his labor to all hundred farmers, going back and forth until he can strike the best deal. He eventually strikes a deal for just a tiny bit less than the value of his additional output, which is his "market wage."

Let us assess the economic impact of the entry of this immigrant into the community. The farmer who employs him increases his own income by just a tiny bit, but that tiny bit is preferable to no increase at all. The "nation's" citizens as a whole are better off, because ninety-nine farmers have their incomes unchanged whereas one has his income increased slightly, and hence the average income goes up just a tiny bit. If we include the immigrant "laborer" in the calculation, however, average income goes down, because the immigrant laborer's income is lower than the average farmer's, in the very short run. Assuming the number of hours worked stays the same, the incremental output of the second person working on the farm is not as great as that of the first worker -- the famous "law" of diminishing returns. But that decline in the average masks the fact that each person's income has gone up, including the immigrant's, because we assume he would not immigrate here unless his income is higher than in the country which he left.

Now, let us change the story by moving ahead to a time after considerable immigration has occurred, when there is one immigrant laborer working for wages on each farm -- wages which will be just about the same as the market wage that the first immigrant got -- and each has been naturalized as a new citizen. But the new citizens have not yet had time to buy any land, so the old citizens still have higher incomes than the new citizens. Now along comes still another foreigner looking for a job. He goes back and forth until he strikes the best deal, and that will be for a wage which is just a tiny bit below the value of the increase in output that his employer will obtain from the third person working on his farm. Soon ninety-nine new foreigners follow him in this second wave of immigration. So on each farm there now are one native-citizen owner (who also does farm work), one naturalized-citizen laborer, and one new-immigrant laborer.

But now something else happens, too: the wage of the naturalized-citizen laborers falls to the level of the new-immigrant laborers. The reason is that all 200 of the laborers are competing for the same jobs, and no owner needs to pay more than the incremental output of a second laborer on the farm to hire two laborers, because the work done by all the laborers is the same. And the farm owners now are making a bigger profit than before, because they only have to pay the "first" laborer the value of the "second" laborer's output.

The overall results of the second wave of immigration may now be seen as follows: The native owners are better off than before. The new-immigrant laborers are better off than in the country from which they came. The naturalized-citizen laborers are better off than in the old country, but worse off than before the second wave of new-immigrant laborers came. And, therefore, the naturalized-citizen laborers will surely mount a political protest against letting the second wave enter the country, although if the second wave is from the same place as the first wave, some of the first wave will, for sentimental reasons, wish to have more of their compatriots enter the country even if their wages do fall.

Let us again change the facts. Assume that the naturalized-citizen laborers have been in the country long enough to buy half-ownership in the farms from the native-citizens, and the total yearly proceeds from each farm are now split between the native citizens and the naturalized-citizens. Along come the new-immigrant laborers. Assume that all three workers on each farm receive as wages only the value of the incremental output of the third worker. The native-citizen and naturalized-citizen owners are no worse off, however, because the drop in their "wages" is equal to their gain in "returns to capital." If this is so, the naturalized citizens are not injured by the entry of the second wave of immigrant laborers.

It seems, then, that whether the existing stock of workers is injured by the new wave of immigrants depends upon who gets the returns to the capital with which the workers labor. Here we may refer back to the realistic world of the United States in 1985. The "workers" in the United States — that is, people who work for wages and salaries — own a very considerable portion of the productive capital of the country, mainly through pension funds, and indirectly get much of the returns to capital by way of the taxes paid on interest and dividends. This means that the situation is not simply one in which "labor" loses and "owners" gain by immigration. The extent to which a working person gains or loses by immigration depends upon the actual facts about the extent to which that working person has an ownership stake in the capital of the country.

Now let us complicate the situation just one bit more before we leave the subject of the effect of immigrants through the labor market. There is also some additional benefit to natives from immigrants because the immigrants do not arrive in such neat one-to-a-farm waves as assumed above. If a given farm successively employs two new immigrant laborers at a wage equaling the incremental output of the "last" of the two, then the citizen owner of the land will obtain the difference between the wage of the next-to-last immigrant —which equals the incremental output of the last immigrant — and the incremental output of the next-to-last immigrant. But this quantity is not of much practical importance and, therefore, can be disregarded, though it is very neat theoretically.

The main conclusion to be drawn from this "model" is that in the short run additional immigrant workers do not damage the welfare of citizens taken altogether, but may damage "workers" if as a class "workers" do not get most of the returns to capital. This effect is transitory, however, and in the long run it is likely to be dominated by many other dynamic effects, especially the effect on productivity, even for classes of people who might be hit hard by this particular effect.

A second reason why Malthus's theory does not apply with much force to contemporary immigration into the United States is that nowadays the most important capital is human capital--people's education and skills which adults own and carry with them--rather than the physical capital supplied and owned by the "capitalists." And immigrants bring with them most of the stock of human capital with which they will work.

As to special groups of workers, especially low-income earners, the actual negative effect is probably less than is commonly thought, and may even be nonexistent. Nowadays legal immigrants arrive with considerable education and skills and enter a wide variety of occupations. Hence, they hurt no occupation or income level very much, even in the short run. (And to repeat, in the longer run, occupations on average benefit from additional jobs created by the purchases made by immigrants to about the same extent that immigrants take existing jobs within occupations. In short, immigrants make jobs as well as take jobs.)

Concerning the public "demographic" capital used by immigrants: We must worry only about the additional capital outlays needed to equip immigrants—the extra schoolrooms, hospital beds, firehouses, and the like. Not relevant is the use of public goods by immigrants that does not affect natives' use or pocketbooks—for example, looking at the Washington Monument or riding on a lightly used interstate highway. And to a considerable extent we are on a pay-as-you-go basis with respect to capital expenditures; the debt service on past public borrowings covers much of the outlay on new capital. Therefore, through their taxes, immigrants pay "rent" on public facilities, and the cost to natives is only about a fifth of the gain through the taxes-and-welfare services mechanism described in the prior chapter. This is an important additional reason that Malthusian capital dilution is not a crucial problem.

A Billion Immigrants?

The effects of immigrants on the economy through their use of capital that have already been discussed operate in the same fashion whether there are few or many immigrants. But there may also be some economic effects of immigration that operate differently depending upon whether the volume of immigration is small or large relative to the existing population.

Imagine a billion Orientals and Africans and South Americans without education or skills suddenly arriving in the U.S. tomorrow. Everything would at first be in terrible shape. The immigrants would lack jobs at first. The economy would be unable to respond immediately with enough jobs; the immigrants themselves would not be creating enough jobs immediately because—jobless—they would not be increasing total income and purchasing power. Natives would suffer inconvenience and would pay out more in taxes and voluntary contributions for immigrant welfare. This scenario—reminiscent of Jean Raspail's Camp of the

Saints--is what many persons have in mind when they think about mass immigration. Let us see what we can learn from it.

There are two key aspects to the scenario--total numbers and educational levels--which we shall separate for the sake of discussion. Assume for now--as is realistic for present cohorts of immigrants--that immigrants have as much education on average as do natives. (This has in fact been generally true throughout our history, despite the popular "huddled masses" view.[1]) The key issue, then, is how soon the immigrants will be absorbed into the economy and no longer require help from the community.

It is reasonable that a billion (or even ten million) immigrants in a year would be absorbed more slowly than one million (or 100,000) immigrants, simply because at any given moment there are a fixed number of potential employers looking for workers, a fixed number of empty stores looking for new shopowners, and a fixed amount of housing. During the period that capital and organizational structure are relatively fixed--that is, before they have a chance to adjust--Malthusian diminishing returns operate; more people working with the same capital leads to less output per person. Additionally, there is congestion. Additional people make it more difficult for the original persons to do the work they were doing before, just as a great many additional trucks in a busy marketplace may prevent all of them from moving, except with extreme difficulty.

For policy-making, we want to know whether a given flow of immigrants is large enough to produce such a short-run squeeze. For evidence we should consider some historical situations in which the flow of immigrants was very large relative to the resident population: the U.S. throughout its early history, but especially the flow of persons from Southern and Eastern Europe around the turn of the 20th century; West Germany and Japan after World War II, which absorbed large numbers of ethnic Germans and Japanese from areas no longer held by those governments; and Israel in the 1950's, which received massive immigration from Arab countries. Those periods of large infusions of people must have had their difficulties. Yet all those absorptions were economically successful, according to almost every student of those periods, measured any way one chooses.

These experiences could imply that the theoretical bad effects are either not really present, or else they operate to an insignificant degree. They might also imply that the relative sizes of those immigrations, massive as they were, still were not large enough for the mechanisms of congestion and capital dilution to come strongly into play. Either way, history should give us pause before we rely on such a theoretical argument to shut off immigration—at least until the level reaches that of the immigrations mentioned above. This implies that the United States can afford to take in a lot more immigrants than it does now.

A second important drawback to very large-scale immigration—which has been overlooked in past technical discussions of immigration—is a force which we may call "human capital externalities." A person's output depends not only on his/her own skills and the quality of the machines that person works with, but also upon the skills of fellow workers. Immigrants from poor countries possess poorer productive skills than do people with the same amount of formal education in richer countries; this is almost definitionally true, and the effect can be seen in the lower incomes of those immigrants in the countries from which they have come than in the incomes they expect in the U.S. (which is exactly why they come). So until they improve their informally learned skills—handling modern communications systems, for example, or getting used to doing things by telephone and computer rather than in person and with pencil and paper--they represent lower-quality human capital for American workers to cooperate with. And this will reduce the productivity (and the growth of productivity) of American workers until the immigrants--in perhaps two or five years--pick up the informal learning, after which time they forge ahead of natives.

Of course, there is a countervailing linked positive effect which needs to be considered--the beneficial impact of working with someone from a different culture. Immigrants cause new ideas to be thought of, even when higher-skilled persons are exposed to more "primitive" ways of doing a job. This effect also is likely to disappear, however, as the immigrants become more Americanized. Just how large is this positive effect relative to the linked negative human-capital effect discussed above is quite unknown at this stage of our science.

The size of the negative human-capital externality effect depends upon the proportion of immigrants that natives work with. If your work companions are one percent new immigrants, the negative effect may be small, and easily outweighed by the positive effect. But if you work with immigrants 50 percent of the time, the outcome might be quite different.

There is an analogy here to school busing. The original notion was that children from poor backgrounds could gain from the school environment (including the other children) that better-off children enjoy, and the better-off children would not suffer thereby. Maybe this is true if one percent or 10 percent are bussed-in children. But what if the bussed-in students constitute 90 percent or

99 percent of the class? Quite obviously, the result for the 90% or 99% would be no different than if they had never left their neighborhood schools (aside from possibly better teachers). And for the better-off children, representing 10 percent or one percent of the population, it would be as if they had been bussed to the poor neighborhood school. If one million Russians or Indians or Chinese move to Champaign-Urbana, Illinois, the schools and workplaces would become like those in their countries of origin. And this is why towns on both sides of the U.S.-Mexican border are somewhere between mainstream U.S. and mainstream Mexican culture and productivity. This line of reasoning simply spells out the person-in-the-street's thoughts about being "inundated" by a great many immigrants.

But, in fact, the average immigrant worker comes to have higher earnings than the average American worker after a few years in the U.S., due in large part to greater youth and a high average level of education. This suggests that the human-capital externality effect comes to be positive in a fairly short time. And it is probably positive on balance, as long as we weigh the future and the present in normal economic fashion.

IV. EFFECTS ON NATURAL RESOURCES AND THE ENVIRONMENT

It is commonly thought that adding immigrants to the population causes greater natural resource scarcity for natives. For example, Zero Population Growth's honorary president, Paul R. Ehrlich, asks us to think about the effect of additional people on the "perilously shrinking water supply in this country. And to our food supply. Think of the competition they'll cause for housing and jobs." The basis for these types of assertions is the 1980 Global 2000 Report:

> The United States in less than 50 years will be more crowded, more polluted, more ecologically unstable, more prone to political unrest, more burdened with social stress, and far, far more precarious than we can possibly imagine.[1]

From one point of view, the analysis is quite simple and straightforward. The impact of immigrants on the environment, and on supplies of natural resources and energy, is similar to the impact of additional citizens, thereby raising no special problems. On the other hand, the whole matter of the effects of additional people on the environment is very complex, and fraught with argument and confusion. To try to deal with these issues in brief is surely to oversimplify and to present a flawed discussion. A large portion of a recent book of mine, The Ultimate Resource, is devoted to a discussion of just this issue.[2] The conclusions may be summarized as follows:

(1) Contrary to popular belief, the long-term trends for virtually every raw material (including energy) are toward sharply lower prices and increasing availability. These trends have occurred during periods of increasing

population. That is, natural resources over the long-run have been getting less scarce rather than more scarce, as indicated by the fundamental economic measure of cost.

(2) In the short run, an additional person necessarily causes increased cost, higher prices, and increased scarcity. It is this effect that many critics of immigration focus upon. For example, consider this statement by the Environmental Fund in a 1981/1982 article called "Immigration and the American Conscience": "Had the United States stabilized its population in 1970, we could have the same level of energy consumption and standard of living as we do today without any Iranian oil or a single nuclear plant."[3] The statement probably is true. But even more probably, and much more importantly, the statement also is terribly misleading—a snare and delusion that will have sad long-run results if it is taken seriously by policy-makers and the public.

This is why. One important flaw in the statement is that the eleven years it encompasses is much too short a period for the most important effects of population change to appear. Babies take a quarter-century to mature into producers of goods and ideas; even immigrants may require several years to reach their full productivity.

It takes even longer for the following historically-crucial cycle to take place. (1) An immigrant-swelled population leads to greater use of natural resources than otherwise. (2) Prices of raw materials then rise. (3) The price rise and the resultant fear about scarcity impel individuals to seek new lodes of raw materials, new production technologies, and new substitutes for the resources. (4) Eventually the price of the service of the resource in question—for example, the price of energy whether produced from wood, coal, oil, or nuclear power--falls lower than it was before the temporary scarcity began. All of this takes quite a while, and is quite indirect. Yet this process has been the mainspring of economic advance for 5,000 years. The process is, however, absent from the statement by the Environmental Fund given above, which makes it seem as if the main effect of the additional people is harmful. Actually, the main effect (after a while) is that we are better off than if the whole cycle beginning with more people had not taken place.

In short, increased demand leads to increased supplies, and ultimately the response is much greater than the original stimulus.[4] In general, increased demand eventually leads to supplies greater than would have existed otherwise.

(3) Again contrary to popular belief, the basic trends in environmental quality are positive, accompanying (though not necessarily caused by) increases in population. The water and food supplies we consume in the U.S. have been improving in past decades by every reasonable measure of quantity and purity, though that fact is too-little known. The air, too, has been getting less polluted, according to the official Pollutant Standard Index (PSI) and other measures provided by the U.S. Environmental Protection Agency. I am aware that most general readers will read these statements with a mixture of amazement and disbelief, and therefore, no short presentation of the evidence will be convincing. I can only, again, refer you to The Ultimate Resource which devotes a good deal of attention to this topic, or to an edited volume which devotes several chapters to it.[5] Or you may examine the latest issue of the Annual Report of the Council on Environmental Quality, where you will find ample documentation of these propositions. This may be especially convincing because the CEQ has long been in the habit of emphasizing bad trends rather than good

ones.

(4) The weight of the evidence suggests that though additional people cause more pollution in the short run, in the long run additional people lead to less pollution, strange as that may sound at first.

This we can now say with considerable assurance: there are no natural or physical "limits" that are an increasing constraint on our productive powers. The Ultimate Resource shows that natural resources (including energy) are, with passing decades, less rather than more of a constraint to U.S. and world growth. The progressive improvement that has occurred in the world's resource availability would not have taken place if population density had remained at the lower levels of earlier centuries and millenia. To cite resource "limits" in discussions of immigration policy is unsound geology and biology, incorrect history, and rotten economics.

V. LABOR MARKET EFFECTS OF IMMIGRATION

Employment is a major issue in the evaluation of immigration, because people contribute to a community largely to the extent that they work and thereby produce goods and services for others to consume. Therefore, the extent of labor-force participation of immigrants as a group, and the length of time it takes them to find jobs, are crucial considerations. And the effect of immigrant employment upon native employment — the "displacement" issue — is probably the most emotionally charged aspect of the debate concerning immigration. These are the issues to be discussed in this chapter.

Amount of Unemployment and Employment among Immigrants

First we shall discuss whether prospective immigrant workers find jobs. Here are some data.

Canada. The average period between arrival in Canada and starting work was 4.2 weeks. Unemployment after six months was 10.1 percent, but dropped

> to 4.8% by the end of their third year (1972) — the final level being higher than the Canadian group's 3.7% but below the average of 6.8% for the male Canadian labour force. At the same time, the duration of unemployment diminished until by the end of the third year after arrival the immigrant sample as a whole, at 2.8 weeks on average, was within striking distance of the control group on this measure. Altogether, considering that average levels of unemployment in Canada remained high during this period, it can be concluded that immigrants were very successful in finding employment in Canada.[2]

Great Britain. The unemployment rates for the New Commonwealth immigrant labor force in 1961 and 1966 were difficult for Jones and Smith to estimate because of spotty coverage of the relevant categories in the census. The 1961 unemployment level for the immigrants in the conurbations (i.e., large, densely populated urban areas) was considerably higher (4.3 percent) than the 1.6% for the total native labor force,[3] but Jones and Smith did not consider this a representative comparison. They had more faith in the 1966 all-Britain figures of 1.63% for immigrants and 1.37 percent for the total labor force.[4] This difference between immigrants and natives is apparently due to the higher unemployment rates for New Commonwealth women, 1.52 percent compared with .76 percent for all women (reflecting the greater propensity for immigrant women to be in the labor force), though all these unemployment rates were so low as to make the comparison not illuminating.

Israel. Within two months of arrival, 66 percent of the Russians who came to Israel in 1972-1973 and were in the labor pool had found jobs. Within one year of arrival, 90 percent of those in the labor force who came in 1971-1972 were employed. For males, the available figures are even more impressive: 95% of the men in the labor pool who came in 1971-1972 were employed in less than a year.

United States. Chiswick's analysis of the 1970 Census of Population shows that immigrants work a week less per year than do native-borns, on the average, but this is probably completely accounted for by age and area of residence. The difference probably disappears after some years of residence in the U.S.

The illegal Mexican immigrants come here to work, and stay only as long as there is work. Contrary to common impression, illegal Mexican immigration is mostly temporary. (An important reason for this is that the illegals often leave close family at home in Mexico.)

Concerning the length of time the illegals are "unemployed" after arrival, Cornelius had this to say:

> Among the illegal migrants interviewed in my study, 62% had found a job in 10 days or less after crossing the border, during their first trip, to the U.S. During their most recent trip, 63% found work within 10 days, and an additional 9% had jobs assured even before they left Mexico (they simply returned to the same employer who had employed them during previous sojourns in the U.S.).[6]

Among Vietnamese refugees, the employment ratio for males aged 16 and over rose from 67 percent in August-September, 1975 (I do not know how long they had then been in the country) to 86 percent in July-August, 1976. This is a rapid rise to a high rate of employment compared to native borns, especially when one considers that some of the males over 16 are in school or retired.[7]

Weintraub and Cardenas found very high labor force participation and very low unemployment among illegal aliens in Texas.[8]

Conclusion. Immigrants do not long remain on the unemployment rolls drawing welfare checks. Rather, they find jobs and stay employed.

Age Distribution and Labor-force Participation Among Immigrants

The proportion of the immigrant group that is of labor-force age (say 20-64, or even better, 25-54) and of the male sex (males have a greater propensity to work outside the home) matters as much or more than unemployment among immigrants with respect to the effect of immigrants on the national product. Workers are contributors to the rest of the community while dependents are not.

Canada. A considerably larger proportion of the immigrants than the Canadian-born residents were of labor force age (15 years plus)—about 75 percent versus about 60 percent.[9] Of all the immigrants arriving between 1947 and 1972, 52.9% were "workers" at the time of arrival, compared to the 33.0 percent of Canadian-born persons who were workers as of the 1961 census.[10] The main source of the difference between immigrants and natives is the age distribution, rather than the participation rates within age groups, which are similar; the main exception is the higher participation rate for immigrant females aged 25-54.[11]

Great Britain. Among the New Commonwealth immigrants, and among all immigrants, the proportion of persons in the prime working ages (25-44) was considerably higher than in the population at large: 46 percent to 26 percent in 1961, and 47 percent to 25 percent in 1966 for New Commonwealth immigrants. The proportion aged 15-24 is also somewhat higher among the immigrants, and the proportions aged 0-14, 45-64, and 65 plus are lower.[12] Partly because the immigrants include a disproportionate number of males, "72% of coloured adults were economically active compared with only 62% of the British population."[13]

Israel. Sixty-eight percent of the Soviet Jews who came to Israel (in 1973) were between the ages of 15 and 64, in comparison with 60 percent of the Israeli Jewish population. For the ages 15-44, the percentages favor Soviet immigrants 47 percent to 42 percent. True, there was a slightly greater proportion of Soviet immigrants than Israeli Jews over 65 (10.5 percent to 7.3 percent). But the significant difference is in the proportion of children. Soviet immigrants have a much smaller percentage of dependent children who require education.

Fifty-three percent of the civilian Israeli population aged 18 and over is currently in the labor force, whereas two years after arrival, somewhere around 65 percent of the Soviet immigrants were in the labor force. That is, a fifth more of the Soviet immigrant adults were in the labor force than the existing Israeli Jewish population--which is a huge difference in economic terms.

United States. The age distribution of legal immigrants is very favorable, with a heavy concentration in the prime labor-force years, as Table V-I shows. Mexican illegal and legal immigrants are heavily concentrated in the prime working ages of 16-44, and the immigrants are heavily male and many are single; married men usually do not take their wives and children with them to the U.S.[14]

DISTRIBUTIONS BY AGE OF LEGAL IMMIGRANTS AND U.S. POPULATION

Age	U.S. Population, 1970 (Social Indicators, 1976, p. 32)	Legal Immigrants to U.S. 1978 1967-1973 (INS Data from Keely and Kraly)
0-19	38.8	34.5
20-39	25.7	46.4
40-59	22.2	13.9
60+	14.2	4.3

TABLE V-I

Conclusion. Among contemporary immigrants in developed countries, just as with almost all groups of immigrants historically, the proportions that are male, young, and of working age are far higher than among the population of the receiving countries (or of the sending countries). This is a major economic advantage to the receiving native population. And the proportion of women who are in the labor force is typically considerably higher among immigrants than among natives of the same age.

Work Productivity of Immigrants

The earnings of immigrants start out lower, but after a few years their earnings come to be as high or higher than those of natives with the same skills. In the U.S.

> [A]mong men of the same age, schooling, and area of residence, the foreign born have 3 percent higher earnings than the native born. The earnings of immigrants rise, though at a decreasing rate, with duration in the United States. The earnings of the foreign born are 9.5 percent lower than the native born if they have been in the United States only five years, 3.4 percent lower if they have been in the United States for ten years, equal after about thirteen years, 6.4 percent higher than the native born after twenty years, and 13.0 percent higher after thirty years.[15]

Certainly this earnings record is impressive because it takes place despite the disadvantages of the immigrants in language, knowledge of the receiving country's culture, and so on. This finding, therefore, suggests that immigrants are either harder workers, or better workers, than natives — or both.

Impact on Natives' Wages and Employment

Immigrants "are taking jobs from citizens," goes the charge. Displacement of citizens from employment by immigrants, and consequent citizen unemployment, is always one of the major fears about immigration. The speculative basis of the fear is simple: if the number of jobs is fixed and immigrants occupy some jobs, there are fewer available jobs for natives.

In the immediate present, the demand for any particular sort of worker *is* inflexible. And, therefore, additional immigrants in a given occupation *must* have *some* negative impact on wages and/or employment among people *in that occupation*. For example, the large recent influx of foreign physicians means additional competition for American physicians, whose high earnings reflect the advantage of an artificially-limited supply of physicians in recent decades. There is reason to believe that American physicians now earn less because of immigrant physicians. Such negative effects upon particular occupations could only be avoided if immigrants were to enter all occupations in exact proportions to the size of those occupations. And citizens whose occupations immigrants enter disproportionately can therefore be expected to complain.

For a particular industry, the issue of immigration has much in common with the issue of free trade versus protectionism: some individuals suffer but the general population benefits. The workers in that industry may be injured even though the public at large will benefit from the lower prices of goods produced by that industry. And as with other "imports," people in that industry usually ask for a reduction or elimination of the imports to prevent harm to themselves.

Whether U.S. society chooses to reduce immigration to prevent such specialized damage to particular occupations surely will depend upon (a) the extent of the damage in those occupations, together with (b) an economic judgment about the overall merits of immigration, and (c) a value judgment concerning the negative value of the damage to the people employed in the occupations suffering harm. That is, the judgment might take into account the tradeoff between the benefit to the community as a whole in the long run versus the short-run protection from competition in certain occupations. The importance of the latter effect is a value judgment, beyond our scope here. But the former is an empirical question.

The effect on the general level of unemployment is even more difficult to assess than the effect upon specific occupations because the job-creating process--which offsets the job-taking process--is so much more indirect and diffuse than is the job-taking process. It is even difficult to establish how many jobs would stand open if immigrants do not come, because after a while employers make other arrangements, either by using machines instead of human labor or by reducing the scale of the enterprise.

Canada. The panel study Three Years in Canada found that almost 5 percent of the respondents--91 of 2037 (1746 males plus 291 single females) in the panel sample on which there is data--had started businesses within their first three years in Canada.[16] Not only did they employ themselves, but they also employed others, "creating" a total of 606 jobs. Expressed as a proportion of the 2037 total immigrants, roughly 30 percent as many jobs were created from scratch as total jobs were held by immigrants. Furthermore, these numbers surely were rising rapidly after the three-year study period; after one year there were 71 self-employed immigrants creating 264 jobs, compared with the 91 and 606 respectively after three years.[17]

We can interpret this result as follows: even if one native Canadian was pushed out of a preexisting job by each five immigrants—an improbably high number--this effect would be more than made up by the new jobs created by the immigrants and occupied by natives.

Great Britain. For the 1961-1966 period studied, general unemployment was sufficiently low that Jones and Smith did not even attempt to determine whether immigrants caused natives to be unemployed. Though unemployment among immigrants also was very low, it tended to rise relatively faster than general unemployment during the business cycle. Jones and Smith, therefore, concluded that the immigrants had the positive effect on natives of buffering the changes in their unemployment rates. [C]olored immigrants bear, in these instances [a rise in general unemployment] an above average amount of the economy's real burden of unemployment."[18]

Israel. For Israel in 1975, two pieces of evidence strongly suggest that Russian immigration did not cause unemployment among veteran citizens: (1) The immigrants, who would be bound to suffer more unemployment than the citizens, suffered little unemployment. (2) There was practically no unemployment among citizens even during this period of high unemployment in other countries.

United States. This recent news story is casual evidence:

> Foreign accents prevail among dishwashers at many restaurants.

> Increasingly, immigrants--some of them illegal aliens--take over the low-paying jobs that many natives shun. "It's hard to find somebody who is dependable and good and speaks any English at all," says an executive of Restaurants Associates Inc., which operates 70 East Coast eateries. Even "high school kids" don't want dishwashing jobs any more, complains an International House of Pancakes official--"they want to be president of the company."[19]

More quantitative evidence comes from two experimental programs which had been designed to fill jobs formerly held by illegal aliens with citizens or legal aliens. In one case, 2154 illegal aliens were removed from jobs, and the California State Human Resources Agency tried to fill the jobs with U.S. citizens, but without success. This is the explanation given in a report of the county of San Diego Human Resources Agency:

> Some of the reasons for the failure were: (1) most employers paid less than the minimum wage rate, (2) the job categories were not appealing to the local resident (a matter of prestige), and (3) applicants were discouraged by not only the low wages but also the difficulty of some jobs, and the long hours demanded by the employers.[20]

A somewhat different explanation is, however, given by the California Employment Development Department:

> Almost all employers who have lost illegals to the immigration authorities say they don't want to use our services, or give us substandard job orders to which we cannot refer American citizens because they pay less than the minimum wage laws allow or pay less than the wage rates prevailing in their industries.[21]

Here are the details of a second experiment:

> On November 16, 1975, the Immigration and Naturalization Service in San Diego initiated the "Employer Cooperation Program." This program was to assist employers to identify illegal aliens on the job, remove them from the payroll, and fill the job slots with local unemployed residents. Since the inception of the special project in November, 1975, through the termination of the program in April, 1976, 340 illegal aliens were identified

> and terminated from their places of employment...
>
> The major jobs being performed by the 340 illegal aliens were in the areas of hotel maintenance, food handling, food processing, laundryman and operative. The highest number of illegal aliens (160) were found working in hotel related situations. One hundred nineteen aliens were located in light manufacturing businesses, 41 in food processing locations, and 20 in general service situations. The largest percent (81%) of the illegal alien workers were earning $2.00 or less an hour. The hourly wages of the vacated job slots ranged from $1.75 to $7.05...

The results were as follows:

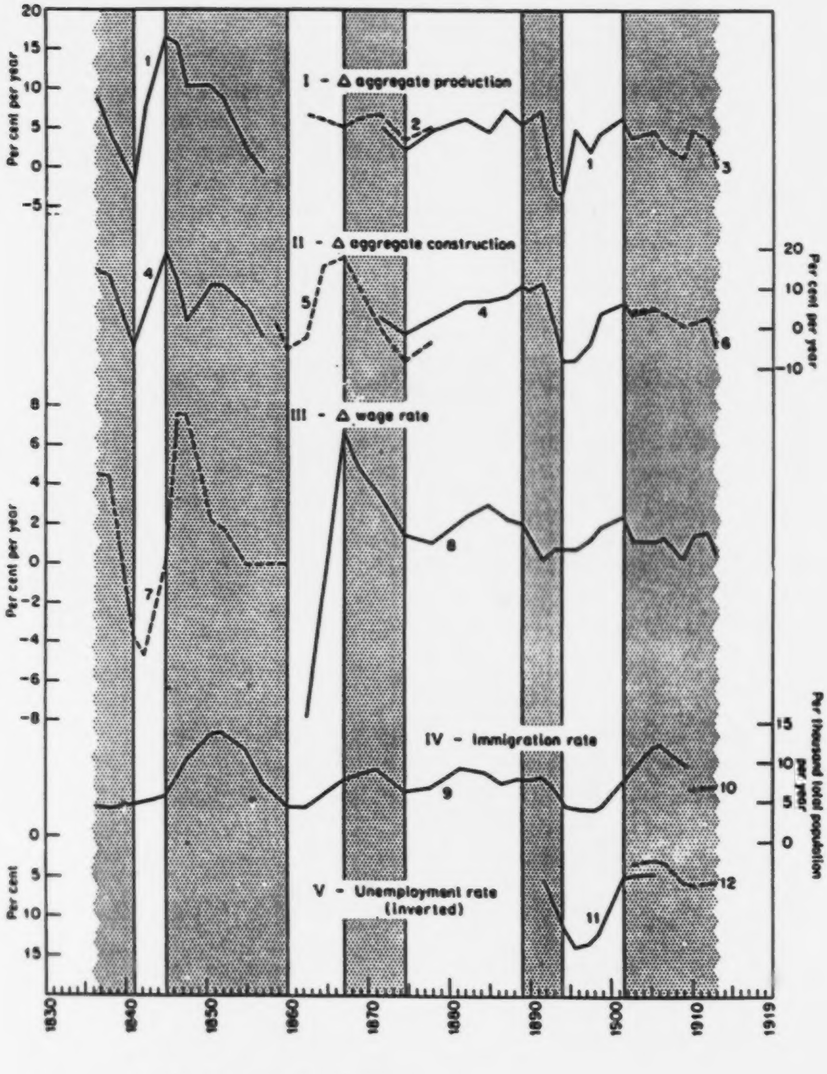
> The San Diego "Employment Cooperation Program" was successful in getting all the 340 vacancies filled. The newly created 340 job opportunities, however, were not occupied by unemployed San Diegns. Instead 90 percent of the positions were occupied by "commuter workers" from Baja California, Mexico.[22]

In earlier decades of this century, when immigration to the United States was less restricted and therefore larger in quantity relative to the size of the U.S. labor force than it is now, the waves of immigration coincided with the waves of business activity in the U.S. Immigration increased when the demand for labor was great, and decreased (or even turned to net out-migration, as in the 1930's) when unemployment increased. About immigration in the free-entry period before World War I, based on his own work and that of previous investigations, Easterlin concluded:

> "[T]he swings in immigration were a response to corresponding swings in the demand for labor in the United States. The evidence is as follows:
>
> In the United States, turning points of long swings in output growth typically preceded those in the rate of immigration, suggesting that immigration was responding to changed conditions in the United States rather than abroad (Figure V-1)...

FIGURE V-1

AVERAGE ANNUAL RATE OF CHANGE IN AGGREGATE PRODUCTION, AGGREGATE CONSTRUCTION, AND WAGE RATE; AND AVERAGE LEVEL OF IMMIGRATION RATE AND UNEMPLOYMENT RATE, NBER REFERENCE CYCLES, 1834-1914



Source: Easterlin, 1968, p. 32.

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> During long swings in the U.S., a rising immigration rate was typically preceded by a rising rate of growth in hourly wages and, as far as the limited evidence goes, a declining unemployment rate; a falling immigration rate tended to follow a decline in the growth rate of hourly wages and a rising unemployment rate (Figure 'V-1). Since the growth of the U.S. labor force from domestic sources, whether from demographic factors or participation-rate change, showed but slight evidence of long swings before World War I (Figure V-1), the implication is that immigration waves were one of several symptoms of common origin, namely, alternating tightness and slack in the labor market associated with swings in the growth of labor demand. The immediate stimulus to migration was probably changes in unemployment conditions.
>
> There is a substantial similarity in the timing of out-migration waves from diverse areas of origin—different parts of Europe, Canada, Latin America, Asia, and even the rural sector within the United States. This observation is consistent with the view that these areas were responding to a common external stimulus such as swings in labor demand at destination.[23]

This link between employment conditions and immigration had the beneficial effect upon the native labor force of reducing the loss of jobs in bad times, while raising the total number of jobs in both good times and bad. There is no reason to doubt that future immigration, if it were not constrained by a quota, would also respond to employment conditions in the U.S. and thereby reduce the severity of unemployment cycles.

Together with Stephen Moore, I have recently made a more intensive study of the effects of immigration upon unemployment than had heretofore been made. We examined how the rates of immigration into a large number of cities in the United States relate to the changes in unemployment over spans of years surrounding the particular years of immigration. (We worked mainly with changes rather than absolute levels of unemployment because the methods of measuring unemployment vary greatly from state to state; changes in levels are relatively protected against this defect.) We find that no matter how we look, and what methods and variables we use in the investigation, the extent of the effect is either very small or non-existent. While we are far from satisfied with the reliability of the study, which we are continuing, it would seem to be much more solid evidence on the matter than has been provided by previous, studies or plain casual observation. The impact of immigration upon *wages* is likely to be greater than the impact upon *unemployment rates*, because potential immigrants with skills that are in low demand choose not to migrate, and those with transferable skills or no skills gravitate to industries where there are jobs--but where their presence will have *some* downward pressure on wages. For example, immigrant physicians are more likely to reduce a native physician's yearly income than to throw him or her out of work.

Smith and Newman analyzed the effects of legal and illegal Mexican immigrants on wages in various Texas cities with differing proportions of Mexicans in the population and at different distances from the border.[24] They found that wages (really, yearly incomes with adjustments for hours and weeks worked, as well as age, education, occupation and migration history) are, indeed, much lower -- by 20 percent--near the border where the Mexican population is proportionally greater than in an inland city such as Houston. But when they adjusted for the cost-of-living differences between these cities, the differential fell to 8 percent. And if they were to adjust for the well-known differentially-higher wage in larger cities--Houston, in this case, compared to Corpus Christi, Brownsville, and Laredo--the differential would be even less. On the other hand, the differential is higher than average for the lower-skilled occupational group.

Conclusion

There must be some loss of jobs and some lowering of wages for some natives as a result of immigration. But in none of our four country cases has unemployment due to immigration been detected statistically except, perhaps, in the U.S., where the observed effect is small if it exists at all. A statistically significant, but not large, wage effect of Mexican immigrants on native workers has been found, however.

Immigrants improve economic conditions for native workers by smoothing out employment over the business cycle. This is especially true of temporary immigrants (including illegals), because they go and come in response to the job situation.

Immigrants not only take jobs, they make jobs. They open new businesses that employ natives as well as other immigrants. And they do so in important numbers. The businesses immigrants open are small at first, of course. But surprisingly, small businesses are now the most important source of new jobs.[25]

Before leaving this crucial topic, perhaps it would be a useful exercise for you, the reader, to reflect on the matter from the perspective of someone else observing you — comparing you as an "extra" person in both the labor market and society versus an immigrant as the "extra" person. What would be the effect upon the labor market if you (assumed for now to be employed by a private or public enterprise) were to die, disappear suddenly, or stop working? Immediately there would be a job opening, and after some shorter or longer period of time a person who would otherwise not be working might be hired for your old job, thereby decreasing the unemployment rolls. Or, some person now working might take the job, and either the second person's job or else the job of someone else down the line might be filled by an unemployed person. So from the point of view of unemployment as a welfare measure, your ceasing to work might seem to be socially beneficial. (Of course it is understood that the valuable output that you produce in your job would be lost to the public that buys it, and material welfare would thereby be decreased unless the unemployed person who finds a job because of your leaving your job produces output as valuable as yours. This effect is not germane to the immediate discussion, however.)

Does this conclusion about you leave you satisfied? Do you believe that you are a drag upon society and that society would be better off without you? Do you consider that this example tells enough of the story when it says that welfare, as measured by unemployment, is increased by your leaving your job, implying that it would be socially beneficial if you were to die or quit tomorrow? Upon reflection, most of us would probably delve deeper into the matter, to meet this threat to our self-respect as well as to change this conclusion so that it jibes with the belief held by most of us that our working is a good thing for other people. And, of course, if we find reasons why each one of us as an additional person is not bad for the society, we have by the same act produced reasons why an immigrant is not bad for the society.

Indeed, there are several possibilities that immediately mitigate or controvert this disturbing conclusion. One such possibility is that you run a private enterprise that employs other persons. If you were to suddenly disappear, some or all of those employees would become unemployed, temporarily or permanently. And though some other persons might become employed in firms that take over some of your business, there would almost surely be some slippage and loss of output and employment as a result of your disappearance. That outcome certainly would represent a loss of welfare on balance. And many immigrants and their children do start new businesses that employ other people -- they almost surely have a higher propensity to do so than natives -- because of the limited opportunities available to them and the greater drive to achieve that immigrants apparently possess. (After all, was not almost every one of the businesses in the United States begun by immigrants or their descendants?)

Another thought that might occur to you is that your replacement might not be as competent as you. Why else would your employer continue to have you on the payroll? Indeed one of the reasons that employers hire immigrants is that they are more competent than available natives at the same wage. It is a rather embarrassing complaint on the part of the labor unions that immigrants -- legal and illegal -- should be kept from competing in the labor force on the grounds that they will work harder, and work longer hours, than will natives.

It also is likely to occur to you -- and this is probably the most important line of thought, though the hardest to perceive in its fullness -- that when you disappear from society you cease earning, and when you cease earning you cease spending. When you cease spending, the demand for labor falls in the industries which produce and sell the products that you might otherwise buy. Some people who would otherwise work will, therefore, be unemployed, and wages will fall somewhat in those industries. This is the fundamental nature of an exchange economy; we all take in each other's washing, and if you can't recompense me, there will be no work for me to do. This is why we can have an economy with as many jobs as there are, growing at the rapid rate at which they have been growing, despite the large number of people newly entering the labor force.

The trouble with this argument is that there is always some adjustment lag between the additional worker entering the labor force and the process playing itself out to its final benign conclusion. It is also troublesome that the process by which this occurs is indirect and hidden from view. But to ignore the process because it is difficult to perceive is foolish. To focus on the immediate effects of immigration -- and to assume the number of jobs is fixed -- is either to have a remarkably short time-horizon or a totally distorted view of how a market economy operates.

You simply are not so dispensable as the simplest arguments show you to be. If you disappear for a while and then return, your coming back to work would not place a burden on other people, but, rather (aside from the shortest-run adjustment difficulties), your return would likely be a blessing to the rest of us. This is true even without considering the taxes you pay, the productivity increases you cause, and the other positive effects (described elsewhere in this monograph) that you bring about. And so it is with immigrants; the charge of taking jobs from natives and thereby causing damage to them is a remarkably truncated and misleading view, but one which underlies the public policy of excluding immigrants and transients from working in dozens of countries.

Perhaps it will be useful to end this chapter on labor-market effects with a brief continuation of the farming-nation parable begun earlier in III-B. The model, as is the propensity for such models, has operated frictionlessly and instantly. But markets do not operate so perfectly, and this leads us to the question of unemployment. Instead of all the original one hundred citizen-to-be farmers producing the same output, let us assume that they constitute a selfcontained community producing a variety of goods and services that they then consume -- grain, laundry service, transportation, religious services, meat, and the like. Each business is composed of one citizen owner and one citizen laborer.

Along comes an immigrant looking for a job. But there is no laborer's job open. So the immigrant goes to one of the farmers whose barn obviously needs painting, and says, "I'll paint your barn for a cheap price, and do a good job." The farmer thinks about it for a few minutes and decides that at the price the immigrant is asking, the farmer's own time is more valuable — either for other work or for recreation — and he tells the immigrant to go ahead. The immigrant spends her resulting income for goods and services in the community, while the farmer spends less by an equal amount because he has that much less to spend. So total income to business remains the same, though some businesses will lose as others gain if the immigrant buys different goods than the farmer. If the farmer uses the time to paint a picture instead of the barn, average income of the community (including the new immigrant who is now included in the calculation) goes down because total income remains the same, simply divided among more persons. But everyone is better off because no one is worse off than before the immigrant came. (The reader will note that the pictures the farmer paints are not counted as income even though the farmer is getting benefit from them.) If, instead, the farmer uses the time to paint pictures that he sells to others, total income goes up, and average income might either go down or go up. In this case, unemployment is not increased by the immigrant's arrival.

But suppose that one of the citizen laborers is out sick or meditating in the woods on unpaid leave at the moment the immigrant arrives, and the immigrant latches onto the citizen's job. When the previous occupant of the job gets back, he cannot immediately find another job and classifies himself as unemployed. Another possibility: the immigrant arrives, goes to the nearest business, and says: "I'll work harder and cheaper than the laborer you now employ." And the owner promptly fires the citizen and hires the immigrant. These are the cases that the labor unions worry about most, and which generate the strongest political objection to immigration now and always. And it undoubtedly does happen this way sometimes.

Another possibility: after finishing the farmer's barn, the immigrant goes around to all the other farmers, points to the fine job that she did, and makes deals to paint four other buildings. She realizes that she cannot do all the work by herself, so she hires three footloose citizens and brings over her cousin from the old country as well. Presto, a new business, and increased total employment; unemployment might then be either less or more than before.

As noted above, some "displacement" of natives by immigrants surely takes place. But the job-creating forces must in fact typically operate at least as strongly as displacement, because research shows that on balance immigrants do not cause more native unemployment. The newest immigrants themselves do suffer at first from relatively high unemployment when times are bad, but that provides something of a buffer for natives.

VI. EFFECTS ON ECONOMIC PRODUCTIVITY AND KNOWLEDGE

Productivity per worker is the key factor in the standard of living of a country. This leads us to ask: why does the average worker in Sweden produce so much more per day than the average worker in Mali, or the average worker in Sweden two hundred years ago? Part of the answer is that the average worker in Sweden today has available to him or her a much larger supply of capital equipment to work with--more buildings, tools, transportation equipment. But that is only a minor factor; as proof, note how fast West Germany and Japan were able to regain a high standard of living even after much of their capital was destroyed in World War II.

The all-important difference between the U.S. or Sweden now, and these countries two hundred years ago, is that there is a much greater stock of technological know-how available now, and people are educated to learn and use that knowledge. The knowledge and the schooling are intertwined. To see this connection, just consider present-day India which, unlike the U.S. two hundred years ago, has modern knowledge available to its citizens in books in libraries. But without the schooling, the knowledge cannot be adapted to local needs. The stock of industrial capital is also intertwined with the stock of knowledge and with education. The value of much of our capital stock — our computers and jet airplanes — consists in the new knowledge that is built into them. And without educated workers, these chunks of capital will not be operated and, hence, would become worthless.

The importance of the technological-knowledge factor has clearly emerged in two famous studies, one by Solow[1] and the other by Denison.[2] Using different methods, they calculated the extent to which the growth of physical capital and the labor force could account for economic growth in the U.S. and Europe. Both found that even after capital and labor are allowed for, much of economic growth cannot reasonably be explained by any factor other than an improvement in the level of technological practice (including improved organizational methods). Economies of scale due to larger factory size do not appear to be very important in this context, though in larger and faster-growing industries the level of technology improves more rapidly than in smaller and slower-growing economies. This improvement in productivity with technological practice did not come free, of course; much of it was "bought" with investments in research and development (R&D). But that does not alter the importance to us of the gains in technolg--ical knowledge.

The size of the population influences productivity in two important ways. (1) More people generally imply a larger volume of purchases and, therefore, larger production. Larger production implies faster productivity gains, much of it through learning-by-doing. (2) More people generally imply more ingenious minds to dream up new and better ways of producing goods and services. We shall consider these two influences in turn.

Aside from their special characteristics as cultural newcomers and as non-owners of capital, immigrants also represent additional people as people. As such, they are additional workers and consumers who increase the size of the markets in which they produce and consume.

Economists as early as William Patty (1623-1687) and Adam Smith (1722-1790) have been thoroughly aware of the importance of the size of the market in influencing productivity.[1] As market size increases, greater efficiency results from the division of labor and other economies of scale. In more recent years, economists have also noted the influence of the size of the market--the total output and income in a market--on the decision to invest. As Ragnar Nurkse put it in a famous article:

> The inducement to invest is limited by the size of the market...the level of productivity depends--not entirely by any means, but largely--on the use of capital in production. but the use of capital is inhibited, to start with, by the small size of the market.[3]

Yet economists--recent economists, at least--have shrunk from drawing the most obvious conclusion from this reasoning: additional people lead to faster economic growth by increasing the size of the market and, hence, boosting productivity and investment. That is, it is obvious that an increase in the labor force is overwhelmingly important in increasing total output and the size of the market. But economists have nevertheless failed to draw the conclusion that in this way more people have a positive effect on overall economic well-being. Sometimes it is said that additional population growth no longer is beneficial through this mechanism because the market is *already* large enough. But no evidence in support of such a qualification has ever been given. Thus, this qualification may be regarded simply as a prejudice. Let us now consider the matter more soberly and empirically.

Economies associated with larger plants are usually one's first thought when considering economies of market scale. And, indeed, larger plants are more efficient, up to a point. But the most important and exciting productivity advantages of larger markets arise at the *industry* level, or even the level of the market as a whole. Let's consider some evidence.

In addition to the commonly-cited evidence about costs falling with city size in such industries as utilities and newspapers, we now have evidence that retail goods, and even most services, are distributed more cheaply in larger communities, once the wage effect is allowed for.[4] And in a general study of the costs of manufacturing production, Sveikauskas[5] found an economically-important advantage in efficiency in larger cities. There is also evidence that less capital is needed to produce a given amount of output in larger cities.[6]. And the cost of capital is lower in larger communities, as measured by commercial loan rates.[7]

Another important element is the greater density of communications and transportation networks that accompanies denser population. This may be seen casually in the larger number of radio and television stations in larger cities. And Segal[8] found that SMSA's (Standard Metropolitan Statistical Areas) with populations of two million or more have 8 percent higher productivity than smaller SMSA's, because "economies exist in transport and communications in the very largest cities..." And in LDC's (less developed countries), Glover and Simon[9] have shown, in a cross-country study, that where population is denser, there are denser road networks, a vital factor for agricultural development.

Still another important element is the greater propensity to produce new ideas that accompanies living in larger cities,[10] and the greater propensity for new ideas and trends to diffuse and be adopted in larger cities.[11] Just why people are more likely to create and pick up new ideas where population is denser is still the subject of sociological speculation, but the evidence for the phenomenon is rather solid.

A larger population implies a bigger market, all else being equal. And larger markets induce faster gains in productivity, due to some combination of learning and competition. Here is just one example of the competitive effect. The January White Sale—a commercial innovation that was costless in the sense that it required no new equipment or expenditures for additional labor—was adopted decades earlier in big cities than in small cities; the obvious explanation is the pressure of competition. The effect of learning is also evident: the more television sets or bridges or airplanes that a group of people produces, the more chances they have to improve their skills through "learning by doing" — a very important factor in increasing productivity. The increased efficiency of production within firms and industries as experience accumulates has been well-documented in many industries, starting with the airframe industry in the 1930's. The bigger the population, the more of everything that is produced, which promotes "learning by doing."

The most relevant evidence on market size and economies of scale comes from studies of industries as wholes. As I mentioned above, it is an important and well-established phenomenon that industries which grow faster increase their efficiency faster—even compared with the same industries in other countries. In Figure VI-1 we see comparisons of the productivity of U.S. industries in 1950 and 1963, and of U.K. industries in these same years. The larger the U.S. or U.K. industry relative to the 1950 U.K. base, the greater is the productivity difference. This effect is very large. It is also consistent with "Verdoorn's Law," which states that productivity goes up with the square root of output. That is, if you quadruple the size of an industry, you may expect to double the output per worker and per unit of capital employed.

Figure VI-1

To repeat, comparisons of faster-growing and slower-growing industries show that in the faster-growing industries, the rate of increase of productivity and technological practice is higher. This suggests that faster population growth--which causes faster-growing industries--leads to faster productivity growth.

The Supply of Ingenious Minds

The source of improvements in productivity is the human mind, and the human mind is seldom found apart from the human body. And because improvements—their invention and their adoption--come from people, it seems reasonable to assume that the amount of improvement depends on the number of people available to use their minds.

This is an old idea, going back at least as far as William Petty in 1682:

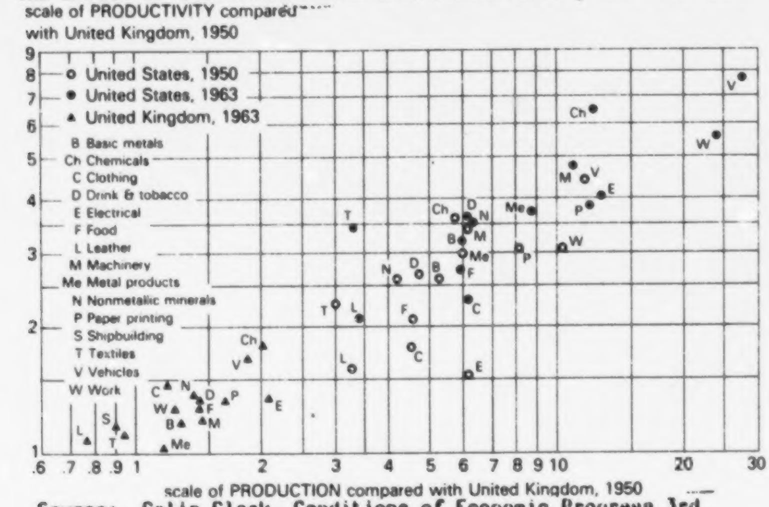
> As for the Arts of Delight and Ornament, they are best promoted by the greatest number of emulators. And it is more likely that one ingenious curious man may rather be found among 4 million than 400 persons...And for the propagation and improvement of useful learning, the same may be said concerning it as above-said concerning...the Arts of Delight and Ornaments...[12]

More recently, this effect of population size has been urged upon us by Kuznets.[13]

Though hard to nail down, the beneficial impact of immigrants upon productivity, as additional workers and consumers, is likely to dwarf all other effects of immigrants after they have been in the country for a few years. Some of the productivity increase comes from immigrants working in industries and

FIGURE VI-1-a

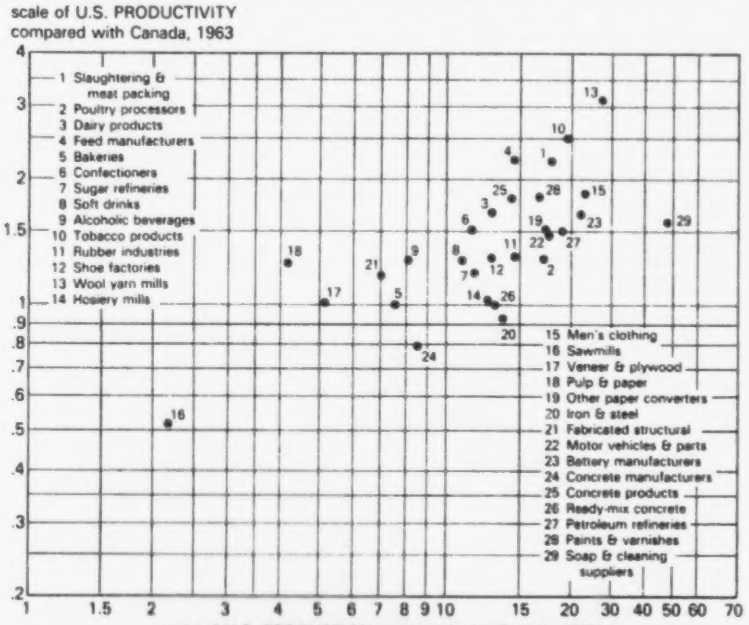
THE EFFECT OF INDUSTRIAL SCALE UPON PRODUCTIVITY, U.S. VS. U.K.



Source: Colin Clark, Conditions of Economic Progress 3rd edition (New York; Macmillan, 1967), p. 265.

FIGURE VI-1-b

THE EFFECT OF INDUSTRIAL SCALE UPON PRODUCTIVITY, CANADA VS. THE U.S.



Source: E.L. West, Canada-United States Price and Productivity Differences in Manufacturing Industries, 1963 (Ottawa: Economic Council of Canada; 1963) pp. 18-22.

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laboratories that are at the forefront of world technique. We benefit along with others from the contribution to world productivity in, say, genetic engineering, that immigrants might make here but would not have been able to make in their home countries. More immigrants mean more working persons who will think up productivity-enhancing ideas. As Soichiro Honda (of motorcycle and auto fame) said: "Where 100 people think, there are 100 powers; if 1,000 people think, there are 1,000 powers."[14]

It cannot be emphasized too strongly that "technological advance" does not mean "science," and scientific geniuses are just one part of the knowledge process. Many technological advances come from people who are neither well-educated nor well-paid: the dispatcher who develops a slightly better way of deploying taxis in his ten-taxi fleet; the shipper who discovers that garbage cans make excellent, cheap containers for many items; the supermarket manager who finds a way to display more merchandise in a given space; the supermarket clerk who finds a quicker way to stamp prices on cans; the market researcher in the supermarket chain who experiments and finds more efficient and cheaper means of advertising the store's prices and sale items...

Even in science, one need not be a genius to make a valuable contribution, as Ortega y Gasset suggested:

> It is necessary to insist upon this extraordinary but undeniable fact: experimental science has progressed thanks in great part to the work of men astoundingly mediocre, and even less than mediocre. That is to say, modern science, the root and symbol of our actual civilization, finds a place for the intelligently commonplace man and allows him to work therein with success.[15]

The need for additional producers of knowledge, and their potential contribution to resources and the economy, is manifest. Nobel Prize winner Hans

Bethe tells us that projections of the future cost and availability of nuclear power—and, hence, the cost and availability of energy generally—would be rosier if the population of scientific workers were larger. Bethe talked specifically about nuclear fusion and a device called Tokamak:

> Work on machines of the Tokamak type is also going forward in many other laboratories in the U.S., in the U.S.S.R. and in several countries of western Europe. If the problem can be solved, it probably will be. Money is not the limiting factor: the annual support in the U.S. is well over $100 million, and it is increasing steadily. Progress is limited rather by the availability of highly trained workers, by the time required to build large machines and then by the time required to do significant experiments.[16]

A casual inspection of the historical record confirms this connection between population size and the growth of knowledge. There have been many more discoveries and a faster rate of growth of productivity in the past century than in previous centuries, when there were fewer people alive. True, ten thousand years ago there wasn't much knowledge upon which to build new ideas. But seen differently, it should have been all the easier ten thousand years ago than now to find important improvements because so much still lay undiscovered. Progress surely was agonizingly slow in prehistoric times. For example, whereas we develop new materials (metals and plastics) almost every day, it took centuries between discovery and use of copper and iron. It makes sense that if there had been a larger population then, the pace of increase in technological practice would have been faster.

For the U.S. in the twentieth century, there is some statistical evidence to support this connection between population growth and productivity.[17] During the period 1950-1962 for the U.S., Denison estimated yearly growth in output in the U.S. of .76 percent due to "advances in knowledge" (which excludes the effect of education on the labor force), and .30 percent due to "economies of scale," for a total of just over one percent. For Northwest Europe, he estimated .76 percent due to "advances in knowledge," .56 percent due to "changes in the lag in application of knowledge, general efficiency, and errors and omissions," and .41 percent due to "economies of scale," for a total of something over 1.5 percent per year. Solow's estimate of the increase in output in the U.S. due to increases in technical knowledge for the forty years from 1909 to 1949 is about 1.5 percent per year.[18]

If a larger labor force causes a faster rate of productivity change, one would expect to see this reflected in observed changes in the rate of productivity advance over time in the United States as population has grown. And indeed, Solow concludes that the yearly rate of change of productivity went from 1 percent to 2 percent between the 1909-1929 and 1929-1949 periods.[19] Fellner found the following rates of increase in productivity: 1900-29, 1.8 percent; 1929-48, 2.3 percent; 1948-66, 2.8 percent.[20] These results are consistent with the assumption that the rate of increase of productivity is, indeed, higher when population is larger.

Is it certain that the faster recent productivity increase would not have occurred anyway, even if population had been smaller? The connections between numbers of scientists, inventors, ideas, and the adoption and use of new discoveries are difficult to delineate. But the crucial links needed to confirm these connections seem very obvious and strong. For example, the data show clearly that the bigger the population of a country, the greater the number of scientists and the larger the amount of scientific knowledge produced. More specifically, scientific output is proportional to population size in countries at the same level of income.[21] The U.S., for instance, is much larger than Sweden, and it produces proportionately more scientific knowledge.

Then why aren't populous China and India the most advanced countries of all? Quite obviously, China and India do not produce as much new knowledge as the U.S. or the U.S.S.R. because China and India are as yet relatively poor, and, hence, they are able to educate relatively fewer people. Why Europe got started on the process of modern economic development several centuries ago and the East did not is a fascinating historical-economic-demographic-cultural question that continues to exercise the imaginations of our most talented historians.[22] There is no agreed-upon and satisfactory answer. But the lack of such an answer is not a stumbling block to the line of analysis offered here. It is instructive that India has roughly the fourth biggest scientific community in the world, despite its poverty, and because of its large population. Put differently, would you bet on Sweden or Holland against Great Britain or the U.S.S.R. to produce such great discoveries as those that will make nuclear fusion practical? (I have omitted the U.S. from this discussion because of its higher per capita income than Britain or the U.S.S.R.)

In brief, the knowledge that leads to technological advance is created by people. The more people, the more technological advance and productivity increase, ceteris paribus. And immigrants are people.

The Vitality of Immigrants

Though the phenomenon has never been documented statistically, there is little doubt of the contribution that immigrants have made to this country's vitality and growth.

Immigrants contribute to the vitality of existing institutions because they tend to be more intellectually vigorous as well as harder working than natives. This surely is why they wind up earning more, shortly after they enter the country, than do natives with similar education. How much of this vigor is due to being "hungry" rather than being settled and affluent, how much is due to their being self-selected for vigor among the populations they come from, and how much is due to the fructifying effects of living in tension between two cultures, is an open question. The answer would be interesting, but it is not crucial in this policy context. What matters here is that, for whatever reason, immigrants are more vigorous than natives.

As mentioned earlier, immigrants also increase national productivity by starting new businesses, which typically are innovative and flexible enough to fill important niches in the market. Again, statistical evidence of the phenomenon is lacking, but it seems indubitable.

One of the nicer effects of immigration is that it increases cultural variety. Chinese and French restaurants are a usual example. But the benefits of variety go beyond consumer and aesthetic pleasures and spill over into economics. Variety is a key ingredient of invention. For example, as a result of eating in a Chinese or French restaurant and comparing the food with what he or she cooks, a homemaker, commercial chef, or food processing executive may get new ideas for recipes combining the foreign and native cuisines. This minor example has often been writ large in major cultural advances produced by contact with immigrants. Because scientific and technical inventions occur inside the mind, and the process is not visible, it is difficult to find convincing examples of this process at work. But the process is obvious in the artistic and religious meldings of many traditions.

In earlier times, the movement of people was crucial in transmitting ideas from one part of the world to another. As Childe tells us about ancient Greece, after it had learned some tolerance:

> The foreigners in each city brought with them and celebrated there their own native cults. With these religions and their officiants spread new brands of magic and philosophy—a motley horde of quacks, astrologers, alchemists, and oraclemongers--competing with traditional beliefs and legitimate sciences.[23]

In the Middle Ages, migrants carried new technologies from one part of Europe to another, thereby enriching the countries in which they settled. And though modern communications speed the transfer process greatly, the movement of people is still very important in transmitting knowledge. For example, I learn much about Japanese and Indian ways of doing things from informal conversations with Japanese and Indian colleagues. Such is the stuff of advances in civilization and economy.

In addition to their direct contributions to output and productivity, immigrants stimulate natives to produce more and to be more innovative, as the natives attempt to keep up with the competition of the immigrants.

Does the U.S. need new stimulus to progress? For a long time I thought that the open and free American system of society and economy would automatically bring forth more than sufficient enterprise and innovation, if the system were not over-regulated and over-taxed. I have become less sure of this, as I have become more concerned about the engines of ambition within Americans. (This is not because of the policies of any particular administration. In my view, no change in policies could have effects in this realm within a year or even two or three.) I have become more open (though not converted) to the view--as urged by Jean Gimpel in his book, The Medieval Machine--that the U.S. is in a period of psychological retrenchment similar to that of Europe around 1300, following a long secular boom of growth and creativity. Gimpel reads the signs of this decline in the cessation of willingness around 1300 to undertake huge and record-breaking projects such as cathedrals; George Will reads a contemporary "collapse of confidence in our ability to act collectively for large purposes...something has happened to our capacity to do things" in the failure, for example, to get the Westway park-and-highway project going in New York City. One might also liken our situation to England in the 1870's as it was being overtaken by Germany--sitting middle-aged and affluent on an obsolescing industrial plant. For the children of the affluent, the carrot of opportunity for profit and achievement may not be enough. Perhaps people really do need the lash of dire need behind them. But immigrants come without assets and social standing. Hence they feel the lash of need driving them, and they spring to grasp the opportunities. The rest of us are the beneficiaries of the progress they foster.

VII. OVERALL EFFECT OF MORE PEOPLE ON THE STANDARD OF LIVING

Given that the immigrants are simply additional people, as well as having special characteristics as immigrants, we must inquire about the effect of more people upon the standard of living. The first part of this chapter examines the empirical data that bear upon the matter, while the second part utilizes a simulation model to illuminate the issue.

The Data

The standard presumption is that additional people--native children or immigrants--have a negative effect on the incomes of others. The main reason given, as mentioned earlier, is diminishing returns to fixed stocks of agricultural, industrial, and social capital. The dependency burden of additional children and older people, the consequent need for additional "demographic investment," and the effects on welfare services are also frequently-mentioned reasons. Because these theoretically-based presumptions are so firmly held in people's minds, let us first confront the conventional theory with the data, which flatly contradict the conventional theory.

Imagine for yourself the results after 100 or 500 years if world population had stabilized in 1000 B.C., 1 AD, 1000 A.D., 1750 A.D., or 1900 A.D. Clearly, a stationary population would in the long run have produced a lower economic level than a growing population.

A key characteristic of an economically mature society is that it possesses the capacity to resolve newly-arising problems more quickly than did less-developed societies. For example, the incidence of famine has declined sharply in the past century because of modern roads and transportation systems. Food scarcity as a result of rapid population growth took much longer to remedy in 1300 A.D. than now, because we now have systematic ways of finding and applying new knowledge that will meliorate the scarcity.

The data suggest that in more developed countries (MDC's), population growth does not hinder economic growth. One piece of historical evidence is the concurrent explosion in Europe of both population and economic development from 1650 onwards. The failure of France to excel economically despite its low birth rate in the past 100 years is an important vignette in that history. A fuller picture is given by rates of growth of population and output per person in those contemporary MDC's for which long-run data are available. No strong relationship appears, as seen in overlapping Figures VII-1 and VII-2, one prepared almost two decades ago by Kuznets, and the other more recently prepared by Maddison.

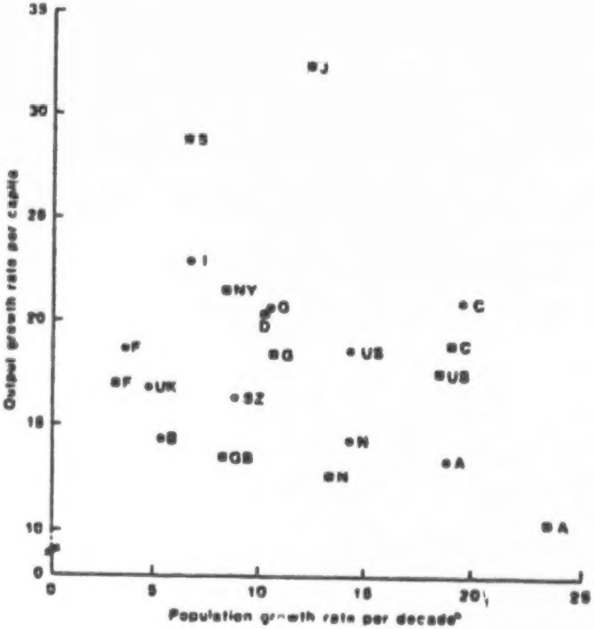
Figures VII-1 and VII-2

Comparisons among various countries of current rates of population growth and economic growth are another source of evidence. Many such studies have been done by now. Among these are studies by some of the best-respected economic-demographic statisticians of recent decades. Lee recently surveyed this literature with the following results:

> [D]ozens of studies, starting with Kuznets' (1967), have found no association between the population growth rate (n) and per capita income growth rate (*y/y), despite the obvious fact that at least since WWII, population growth rates have varied considerably (Chesnais and Sauvy, 1973; Isbister, 1975; Thirlwall, 1972; for example). These studies control for other factors such as trade, aid and investment to varying degrees. Two recent studies add historical depth to this analysis (Bairoch, 1981, and Browning, 1982); even within countries (and thus

FIGURE VII-1

THE NONRELATIONSHIP BETWEEN POPULATION GROWTH AND GROWTH OF LIVING STANDARDS OVER HALF A CENTURY (o) AND A CENTURY ( )



A, AUSTRALIA	- 1900-04 to 1936-67 and 1861-69 to 1963-76;
B, BELGIUM	- 1900-04 to 1963-67;
C, CANADA	- 1920-24 to 1963-67 and 1870-74 to 1963-67;
D, DENMARK	- 1865-69 to 1963-67;
F, FRANCE	- 1896-1963-66 and 1861-70 to 1963-66;
G, GERMANY	- 1910-13 to 1963-67 and 1850-59 to 1963-67;
GB, GREAT BRITIAN	- 1855-64 to 1963-67;
I, ITALY	- 1895-99 to 1963-67;
J, JAPAN	- 1874-79 to 1963-67;
N, NETHERLANDS	- 1900-09 to 1963-67 and 1860-70 to 1963-67;
NY, NORWAY	- 1865-69 to 1963-67;
S, SWEDEN	- 1861-69 to 1963-67;
SZ, SWITZERLAND	- 1910 to 1963-67;
UK, UNITED KINGDOM	- 1920-24 to 1963-67;
US, UNITED STATES	- 1910-14 to 1963-67 and 1859 to 1963-67.

Source: Simon Kufnets, Economic Growth of Nations
(New York, Norton, 1971, pp. 11-14.

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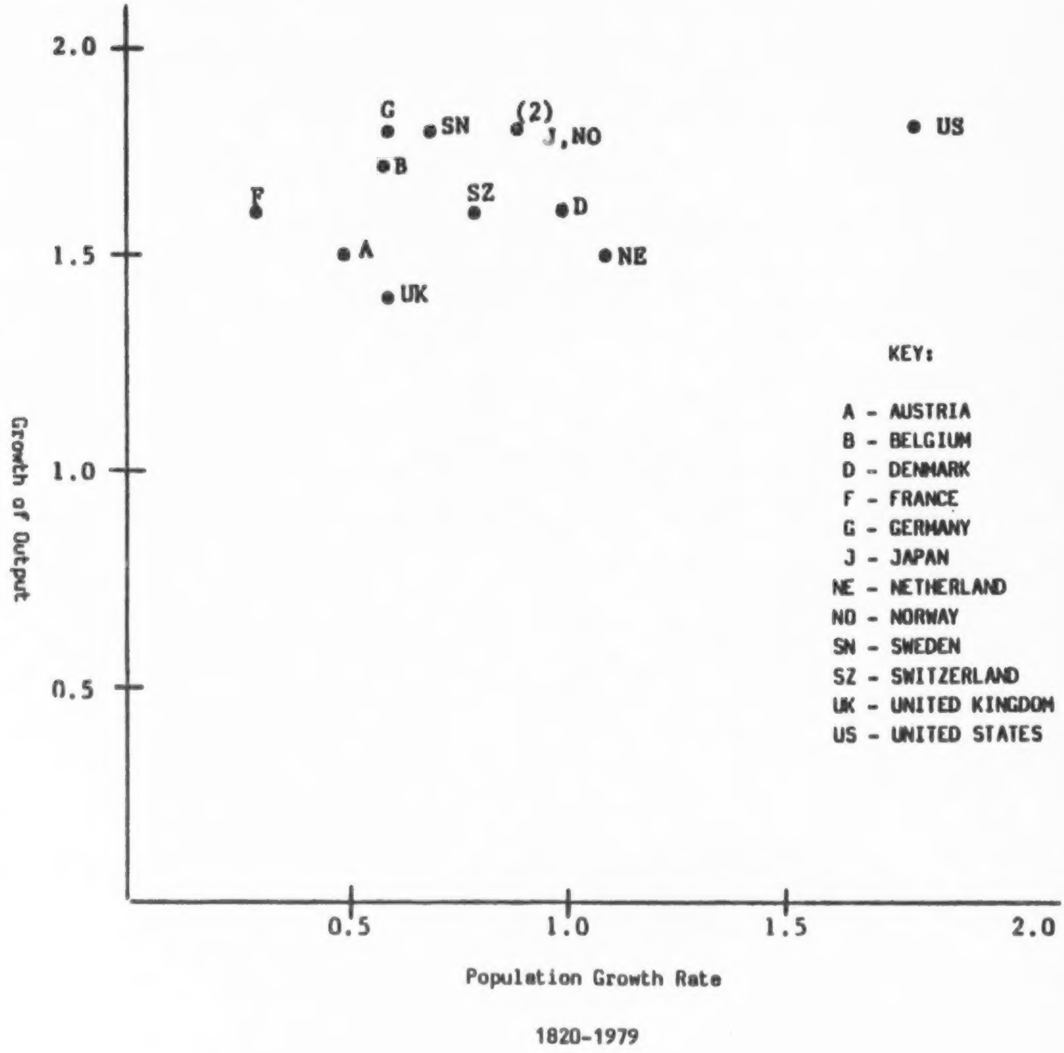
FIGURE VII-2

160 YEAR GROWTH RATES OF OUTPUT AND POPULATION

(DEVELOPED COUNTRIES)



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Source: Angus Maddison, Phases of Capitalist Development, (Oxford: Oxford University Press, 1982) pp. 44, 49.

> looking *only* at disequilibrium), over periods as long as a century or as short as 25 years, there is no significant association of n and *y/y, for either DCs or LDCs; put differently one can't reject the hypothesis that the regression coefficient of *y/y on n is unity. I know of just two exceptions to this general picture: the studies by Hazeldine and Moreland (1977) and Suits and Mason (1978), both dealing with cross-sections; both find negative effects of population growth of magnitude roughly equal to the share of non-labor inputs in production, as many theories would predict. However, data problems render these results suspect.[1]

These overlapping empirical studies do *not* prove that fast population growth in MDC's *increases* per capita income. But they certainly imply that one should not confidently assert that population growth *decreases* economic growth.

A recent piece of evidence is telling: contrary to common impression, per capita income has been growing proportionately as fast or faster in the LDC's than in the MDC's.[2] And population growth in LDC's is faster than in MDC's. No evidence here of a negative connection between population growth and economic growth.

The aforegoing studies focus on the *process* of population *growth*. If we look at the *attained level* of population — that is, the population density as measured by the number of persons per square mile, say — we see much the same effect. Evidence on MDC's is lacking. But in LDC's, Hagen[3] and Kindleberger[4] show visually, and Simon and Gobin[5] show in multivariate regressions, that higher population density is associated with higher rather than lower rates of economic growth. This effect may be strongest at low densities, but there is no evidence that the effect reverses at high densities. Hong Kong and Singapore are striking cases in point. Stryker shows a similar effect for agricultural productivity.[6]

It may at first seem beyond belief that greater population density leads to better economic results. This is the equivalent of saying that if all Americans moved east of the Mississippi, we would all be better off. Upon reflection, this bizarre proposition is not as unlikely as it sounds, and its explication is illuminating. The main loss involved in such a move would be massive amounts of farmland. However, this would not be a calamitous loss. Though the United States is a massive producer and exporter of farm goods, agriculture is not central to our economy. Less than 3 percent of our income comes from agriculture, and less than 3 percent of our working population is engaged in that industry. The capitalized value of all our farmland is only a bit more than a tenth of just one year's national income, so even if we were to lose all of it, the loss would equal only about one year's expenditures on liquor, cigarettes, and the like. On the other hand, such a compression of our population would bring about major benefits in shortening transportation and communication distances. This has been an important factor in Japan's ability to closely coordinate its industrial operations in such a fashion as to reduce inventory and transportation costs. Additionally, greater population concentration forces social changes in the direction of greater organization, changes which may be costly in the short run but which, in the long run, increase a society's ability to reach its economic and social objectives. If we were still living at the population density achieved ten thousand years ago, we would have none of the vital, complex, social and economic apparatus that is the backbone of our contemporary society.

The Simulation

I shall briefly present a simulation model to help us estimate the overall effect of immigrants upon the incomes of citizens.

If an economist is to be worth his/her keep, she/he must take account of the size and importance of the various influences and calculate the net effect. One can only obtain a satisfactory overall assessment of the effect of immigrants on the standard of living of citizens by constructing an integrated model of the economy and then by comparing the incomes produced by the economy under various conditions of immigration and population growth.

For simplicity and clarity, the model deals with a single cohort of immigrants; a continuous dynamic analysis yields similar results, however. Also for simplicity, I sometimes talk of a representative family instead of the immigrant cohort as a whole.

The question I want to answer is whether the "citizen" population--that is, the people living in the U.S. before the immigrant family arrives--is better off or worse off economically if the immigrant does or does not enter the U.S. In more precise terms, I wish to know if the lifetime income of the (average member of the) citizen population is higher or lower if the immigrant comes.

For details on how the model is constructed, the economist reader may consult my technical paper that describes this model.[7] For the lay reader, it should be enough to know that the model is similar to the simplest sort of macroeconomic model, except that the additional persons added to the model as immigrants bring no capital with them and thereby reduce the productivity of native workers, at least temporarily. The assumption that is made about the extent of use of capital by immigrants is unrealistically high, as discovered in subsequent work, thereby disadvantaging immigrants in these calculations. But even this bias does not make the overall balance negative, as we shall see. Also taken into account in the model are the increase in productivity by the additional workers in the fashion described above, and the welfare and tax transfers to and from the immigrants.

The model is run for 30 years, one year building upon the previous year's results. Each year the incomes of natives with and without immigrants are calculated. And a present value of the stream of incomes in successive years is also calculated, just as one does with an investment in real estate.

If we take into account only the above elements, the simulation shows the overall balance for an immigrant family, in terms of its effect upon the native population, to be just slightly negative in years 1-3, and positive in year 4 and thereafter. Consideration of the defense budget--which is likely to be invariant with respect to the number of immigrants--that is, immigrants reduce defense expenditures per citizen--pushes the effect even further in the positive direction.

The stream of negative and positive effects may be evaluated just like any other investment with negative outgoes at the beginning and positive incomes later on. Even if we make an assumption about the extent of the returns to capital that is "conservative," in the sense that it understates the benefits to natives from additional immigrants, the rate of return on the "investment" decision to bring in an immigrant is between perhaps 10 percent and 28 percent per annum, an excellent investment by any standard.

In brief, on reasonable assumptions, immigrants have a very positive overall effect on citizens' incomes, starting almost immediately and getting larger quite rapidly.

Summary of Aggregate Effects

To review, there are two key aspects of the overall impact of immigrants upon the standard of living of natives. One is the effect of immigrants upon total productivity and then upon productivity per worker. Two major factors influence the total product: (a) the capital-dilution effect, through which an increased number of workers operating with the same amount of capital means less output per worker due to diminishing returns; and (b) the economies-of-scale effect through which increased market size, learning by doing, and externalities result in gains in productivity.

The second key aspect is the distribution of the total of goods and services produced by the society between citizens and immigrants. (a) The skills of the immigrants affect their earnings, of course. Their direct wages approximate their marginal product reasonably well, which makes that part of the analysis simple. But additionally, immigrants pay taxes, and an overall analysis must allow for differences between the taxes paid by the average immigrant and by the average native. This difference is influenced by the earnings of the immigrant, but also by whether the immigrant is a dependent or a producer—and immigrants are disproportionately producers, as we have seen. (b) More complex is the effect of the extent to which immigrants make claim to the fruits of the industrial and social capital already in place in the society. As Berry and Soligo point out,[8] the fact that immigrants do not immediately own the capital with which they work is crucial in calculating the effect of immigrants upon the average income of the native population, at least in theory. If the immigrants do not somehow acquire property rights to the country's capital and to the revenues that flow from the capital, then the average income of the veteran population necessarily rises on account of the immigrants; the immigrants are paid their marginal product, and the marginal product of the existing capital goes to the native population. Berry and Soligo proved that on these assumptions, the average income of the native population must go up. On the other hand, aside from economies of scale, an immigrant must have a negative effect on natives' incomes in a true socialist society where a new citizen immediately becomes a full partner in the country's capital. But since the U.S. is not such a socialist society, it seems fairly clear from the evidence that in the long run immigrants do not have a negative effect on the incomes of natives.

VIII. INCOME DISTRIBUTION, EFFECTS UPON OTHER COUNTRIES, AND ADDITIONAL REMARKS

Until now we have paid attention to the effect of immigration upon the average standard of living of natives. This chapter takes up some issues concerning distribution of that income.

Income distribution is a matter of very great interest, often so great that it distracts us from the production of income. (It is a counterproductive interest for all except those who are more interested in relative standing than in the consumption possibilities afforded by income.) I will begin by discussing the effect of immigrants upon domestic income distribution, and then proceed to a discussion of the effects of immigrants on the sending countries and upon the world as a whole. After that I will offer some brief remarks on other topics that do not find a convenient home elsewhere in this essay.

Income Distribution

In theory, immigration of persons without capital, or with lower than average amounts of capital, should increase the disparities in income distribution in a society (assuming that the immigrants' earnings are not above average). The theoretical inference is that the additional supply of labor increases the earnings of the "capitalists" who are assumed to represent the upper-income group, while it decreases the earnings of "workers," who are assumed to represent the lower-income group. Hence, the income distribution would be wider with immigration than without it.

Several general observations cast doubt on this theoretical outcome, however:

(1) Though the United States has swelled more by immigration than has almost any other country, the income distribution in the U.S. is not particularly wide.

(2) Some groups with the highest earnings in the U.S.—people of Italian, Chinese, Irish, Japanese, and Eastern-Europe-Jewish extraction—are of rather recent vintage to the U.S.[1] This suggests that even if the short-run effect of a group of immigrants is to increase disparities, the longer run does not reveal such an effect, but instead suggests that immigration will narrow disparities in income.

(3) Immigrants often bring substantial amounts of capital with them, a flow which mitigates the short-run capital-induced widening in the income distribution.

(4) The amounts of education and skill that the immigrants bring with them necessarily influence the short-run effect they have on income distribution. In recent years, the average education of immigrants has been roughly the same as that of natives, with relatively large concentrations at both the high-education and low-education ends of the spectrum. Furthermore -- and this is very surprising in light of the view of immigration expressed by Emma Lazarus' "tired, poor, huddled masses" and by Oscar Handlin in his famous The Uprooted -- immigrants have always come reasonably well equipped with education and skills relative to natives at the time of their arrival, even in the previous century.[2] This is prima facie evidence that the most likely cause of widening income distribution does not accompany immigration.

There also is fairly solid direct evidence on the issue. One relevant piece of evidence is the amount of dispersion in the earnings distributions of natives and immigrants. The SIE data discussed earlier (Table VIII-1) show that the dispersion of incomes in 1975 (as measured by the standard deviation) was considerably less for each cohort that came since 1965 than it was for natives at that time, even though average income was as high or higher for immigrants than for natives (except for the 1974 recently-arrived cohort). This roughly holds true both for heads of families and for entire families' earnings. The dispersion is very slightly higher for the cohorts who came before 1965, but this is overbalanced by their relatively higher earnings compared to natives. Of course, a low though narrow income distribution for immigrants could widen the overall distribution, but this does not seem to be the case.

Table VIII-1

We should note that even unskilled immigrants need not have a long-run worsening effect upon the income distribution. Many of the Chinese and Irish started as unskilled railroad laborers, and many of the Italians and Jews began work without saleable skills in the lowest unskilled occupations of the big cities. But by now, both groups have long ceased to drag down the bottom of the income distribution. In short, unskilled immigrants temporarily widen the income distribution in the U.S. But in the long run, this effect tends to disappear or reverse.

TABLE VIII-1

1975 EARNINGS DISTRIBUTIONS OF FAMILIES FOR IMMIGRANTS AND NATIVES IN PERCENT OF EACH GROUP (WEIGHTED FOR STRATIFICATION)

Year Entered U.S.	< $2,500	$2,500-4,999	$5,000-9,999	$10,000-14,999	$15,000-19,999	$20,000-29,999	$30,000-39,999	$40,000-49,999	$50,000-74,999	≥ $75,000
1974	12.0	22.9	26.6	22.6	4.5	8.4	.2	2.0	.4	.3
1973	16.5	10.8	30.4	20.2	10.7	13.5	.8	.9	2.2	0
1972	1.5	15.4	33.7	21.7	12.3	9.5	5.2	.7	.1	0
1971	5.7	15.1	37.0	18.9	8.7	8.3	2.6	1.9	1.7	0
1970	7.5	9.8	29.4	27.9	16.1	6.4	2.3	.4	0	0
1965-1969	4.5	9.5	28.6	24.0	14.2	14.8	2.7	1.0	.6	.1
1960-1964	6.6	7.1	19.2	24.7	14.6	19.1	4.1	3.2	1.5	0
1950-1959	6.5	7.2	22.3	21.2	18.9	16.3	5.4	1.2	1.1	0
Natives	10.7	8.7	21.5	22.3	15.8	15.5	3.3	1.2	1.0	.1

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Effects on the Sending Countries

There are three major ways in which out-migration affects the sending country: (1) remittances; (2) abandonment of social capital by emigrants; and (3) brain drain.

Remittances. From the point of view of the U.S., remittances sent abroad by immigrants or guest workers are similar to payments for goods imported by natives of the U.S. The only difference is that labor is imported instead of goods. It does not matter to the balance of payments whether a country imports goods or labor services, though this fact will not be obvious to the non-economist. The country of immigration must export its own goods or services in payment for the remittances, but in return the country of immigration gets the immigrants' labor. For the country sending the immigrants and receiving the remittances, however, the remittances are purely a gift, and a very important one for many countries such as Yugoslavia, Jordan, Greece, Portugal, and many in Africa.

Abandonment of Social Capital. When an immigrant leaves, he or she leaves behind the rights to the benefits from publicly-owned ports, roads, hospitals, and schools. Therefore, there remains larger stock of capital per remaining resident, to the benefit of those who remain -- at least in theory.

Brain Drain. The economic literature contains much controversy about whether, and how much, the immigration of an especially-skilled person injures the sending country.[3] Some writers emphasize the negative external effects, while others suggest that the person is paid nearly his full marginal product before leaving, and therefore the external effects are small or nonexistent. The arguments are, unfortunately, beyond the scope of this monograph.

An interesting simulation study by Goldberg, Havrylyshyn and Mangum using data from the Philippines and the U.S. for physicians' earnings, education costs, and likely size of remittances, suggests that on balance the emigration of doctors would benefit the Philippines.[4]

Migration and the World Standard of Living

If we consider both the sending and the receiving countries as part of the same world, then -- and on this every economist agrees -- the overall effect of migration on the average standard of living of all the people of the world is positive. The reason for this is that the migrant goes from a place where he or she is less productive to a place where she or he is more productive. This increased production benefits the standard of living of the community as a whole, as well as that of the migrating individual.

Migration and Economic Development

The last paragraph suggested that migration can improve the overall standard of living by putting a given individual in a context where the cooperating elements--capital and infrastructure--enable the person's original skills to be more productive. Of benefit also is a mechanism which leads a person to be more productive by changing the person--by "educating" him or her in the broadest sense. In the long run, this may well be a more powerful factor than the change in location in affecting the standard of living in the poorer countries and in the world as a whole.

The key point is that economic development is essentially a matter of learning new skills, new ways of working and living. There is much reason to think that migrants learn more economically useful knowledge by migrating to MDC's than they would have acquired if they had remained in their native lands. The kind of learning referred to here is neither schooling nor on-the-job training. It is, rather, the learning acquired outside of school and outside the family, if the family is poor. Examples are knowledge of sanitation, belief in the importance of punctuality, belief that ambition can result in benefits, knowledge of educational opportunities, skills like riding a bicycle, and styles of behavior such as driving a car carefully. This sort of learning includes a change in much of what is called "culture" by the anthropologists. It is informal learning acquired through street encounters and participation in community life.

Consider Patinkin's observation about Israel, a country which has had a proportionately large number of poor immigrants:

> [F]ormal education does not seem to have played too great a role in the development of Israel's efficiency over the period of [mass immigration, 1950-1958]....On the other hand the role of informal education has possibly been more significant. This may have expressed itself at the simplest level in the acquisition by the new immigrants of both the language of the country and its ways of life and work...[5]

Urbanization is a crucial part of the migration and modernization process. "The city is a school. It inculcates habits of mind and behavior that can be learned nowhere else. There the person learns adaptability to the challenge and flux of new experience. He gains a cosmopolitan outlook..."[6]

Migration clearly is efficient in equalizing incomes among different geographic areas. This is proven by the lesser dispersion among per capita incomes in different parts of the same country as compared to the dispersion among per capita incomes in different countries. For example, the range of the highest and lowest state PCI's in the U.S. — Alaska and Mississippi — was from $12,790 to $6,580 for 1980,[7] whereas the spread in per capita income in 1982 between Switzerland and Chad was from $17,010 to $80.[8,9]

The smaller areas and the greater homogeneity in underlying conditions within countries, as compared to the differences between countries, do not account for this phenomenon. The difference in per capita income between Texas and Coahuila across the river, for instance, is probably not very different from the difference between the per capita incomes of the U.S. and Mexico, $10,742 and $1,612, respectively, in 1979.[10] Nor is the relatively small intra-country dispersion of incomes explained by the mobility of capital flowing from place to place within a country, population remaining fixed. If capital were the active agent, then the movement would also have acted to reduce the dispersion among countries, given that capital moves relatively freely across international borders.

It is reasonable to think that this equalization due to migration is accompanied by an increase in the level of general income, and to think also that much of the increase is due to the changes in the individuals and their work habits, as well as to changes in circumstances.

What about Exploitation of Immigrants?

Earlier, I stipulated that the subject of this essay is our own U.S.

national interest rather than the welfare of foreigners. But one of the most surprising and attractive aspects for us of admitting more immigrants is that we can do good, in a humanitarian sense, by the very same act that does well for us economically. Immigration is good for the immigrants on average, which is why they want to come. Permitting them to enter affords us the luxury of feeling charitable, even while it makes us better off.

Members of Zero Population Growth, and others who would reduce immigration, find themselves in an uncomfortable inconsistency here. They portray themselves as humanitarians. When they argue against population growth, they assert that they are really doing a favor to the people who might otherwise be born but whom their anti-natal campaigns keep from being born. They claim that such people would only be miserable if born. (This is not the occasion to dispute the lack of logical and empirical foundation in this point of view.) But in the case of immigration, the immigrants have been born already, so the ZPG'ers cannot claim they are doing foreigners a favor by keeping them out.

Occasionally one hears the argument (though mostly with respect to illegals) that we ought not to admit immigrants because we exploit them economically when they get here by paying them low wages. As FAIR (Federation for American Immigration Reform) puts it, "powerful economic forces are benefitting from being able to exploit illegal immigrants."[22] At the base of this argument lies the notion that the speaker knows better than the potential immigrant what is good for him or her, that even if the potential immigrant prefers to work in the U.S. for whatever she or he can earn, it would be better to make him or her stay home and earn even less. This strikes me as nothing but arrogance and selfishness parading as idealism--and the selfishness even lacks factual foundation!

Garrett Hardin of the Environmental Fund offers the ingenious argument that it is really idealistic of us to keep out immigrants, because doing so allows us to keep ourselves strong and, therefore, able to help the rest of the world. If we were economically weak, he says, the rest of the world would not have the benefit of our technological contributions.[12] But as long as we recognize that admitting the immigrants makes us stronger rather than weaker, scientifically as well as economically (and, of course, militarily), even this argument--which at least is not ethically inconsistent--goes up in smoke.

Once more, however, let me emphasize that there is no ethical dilemma. We do not need to balance the gains to others against the sacrifice to ourselves. We do not need to consider the ethical basis of simply drawing a boundary line around our nation and saying that those who are lucky enough to be born within the line are entitled to wealth and opportunity that we choose to deny to others for selfish reasons. We do not need to make these choices, because by admitting immigrants we do good for ourselves at the same time that we are doing good for them.

We sometimes seem frightened at the number of persons who want to come to the U.S.; we act as if we are under siege. As an example, consider this from a letter to the editor in the Wall Street Journal:

> We are faced with the fact that some large percentage--and it could be a very large percentage--of the earth's 4 billion non-U.S. inhabitants would opt, if they could, to leave where they now live and come to this country. If that happened, Lifeboat U.S. would quickly sink.[13]

I suggest that we should be glad that our society is sufficiently attractive to have such a problem; the Soviet Union apparently has no difficulty with illegal immigration. If people ever stop wanting to come here in large numbers, we will feel quite badly, I think, like a beauty whose charms have faded. And the large number of immigrants who return to their countries of origin indicates that living in the U.S. is not the unequalled paradise that many frightened Americans seem to think it is: not everyone wants to stay here.

Another Wall Street Journal article[14] was entitled: "Romania Acts To Keep People From Emigrating." What a sad commentary on a society that it must retain its people by force. The Berlin Wall, with its memorials to people who were killed just for trying to leave East Germany, makes every Western viewer shiver. What a terrible judgment on a society that people want to leave so much that they must and will risk their lives to do so. This should remind us how wonderful it is that people want to come here, and we should value that fact.

Another comparison: if news reports are accurate, the U.S.S.R. is importing dissident Vietnamese by force and holding them captive for work on its Siberian pipelines.[15] Such examples put our own situation in better perspective.

The Mixed Benefits of Cultural-Economical Changes

Let us now consider a variety of less tangible influences upon our national economic self-interest.

International Trade. Immigrants (and their children) can help our export campaigns by speaking the languages of foreign buyers and by sharing their cultures. We are sufficiently concerned about this that the federal government already has begun funding programs to teach foreign languages to native Americans for exactly this purpose of promoting trade. One does not need a careful evaluation and an explicit cost/benefit analysis to show how inferior is the latter device compared to admitting immigrants.

An illustration of this benefit from immigration is found in an article entitled: "Brazil's Japanese Population Thrives, Helps Tokyo Forge Ties With Brazilia." The article tells about a growing community of 800,000 Brazilians of Japanese descent, the largest collection of ethnic Japanese outside Japan. They include farmers, bankers, bureaucrats, engineers and politicians. And they are an important link in ripening financial ties between Brazil and Japan, according to the article:

> The Japanese are more cooperative with Brazil in investing and financing than traditional industrial countries. They are very aggressive in international trade. Maybe you could say we have a special relationship, says Ernane Galveas, Brazil's finance minister.[16]

Political Relationships. The personal tie that develops between countries when there is immigration from one to the other, even across gulfs of ideology and conflict, is a political as well as an economic benefit. The Polish-U.S. and Greek-U.S. connections are prime examples. Think how useful it would be to increase such connections with China, India, Indonesia, Brazil, and other countries. There is also something of a hostage effect here. Was it Swift who suggested that a good way to prevent war would be to have the children of the national leaders of hostile countries live in the capital cities of their opponents? Having adult children study in rival countries could be a practical step of the same sort. Immigrants serve a similar purpose.

National Heritage. Let us next consider a socio-cultural issue. Wanting to maintain the human character of your country as it is, or as it has been, is not necessarily racism, nor is it necessarily illogical. Most of us desire that our "lineage" be continued (as seen most starkly in those who worry about the continuation of the family name), and we want the special character of our group--its folklore, language, and culture--not to die or be replaced. Similarly, one may be willing to have less income growth on average if this is the price of maintaining the nation's special character. That is, one reasonably may--and many probably do--prefer continuing "us" as we are, rather than improving "us" if that necessarily means including "them." Such sentiments are consistent with tighter immigration quotas, even if one accepts the arguments made above that immigrants have a positive effect on the nation's economy.

We should not, however, let the occasional appearance of racism or of public opinion polls showing antagonism to immigrants fool us into thinking that public hostility is greter than it really is. R. Simon has studied public opinion toward immigrants in the U.S. over the past century, in polls and in the content of magazine articles.[17] She has found two common patterns. First, in every period people have said: "The immigrants who came in past years were fine: it's only now that we're getting the dregs." Opinion about current immigration would seem to arise largely from news stories rather than from first-hand observation, whereas the opposite is less true for the past immigrants. Her second finding is that the polls have shown strong resistance to immigration as far back as polls existed in the 1930's. And even before then, the sentiment is apparent from a survey of magazine articles. But at the same time, the U.S. has been admitting immigrants fairly freely, and there has been no active public protest in the form of, say, riots, since the anti-Irish riots in the middle of the last century.

It is a major blessing for the United States that it can accept large numbers of immigrants without having to worry about injecting an indigestible minority into a homogeneous majority. We are already sufficiently heterogeneous that more variety is not a threat to harmony the way it may be in, say, Sweden, where migrants from Pakistan already present problems of racial conflict, or in Great Britain, where race riots have shocked that country and where there seems no easy solution. The U.S. got past that problem stage long ago, and greater diversity might well lead to even more harmony and less feeling of injustice in politics and society.

IX. CONCLUSION

Now it is time to draw the threads together.

The most important negative effect of immigrants upon natives is the dilution of the stock of capital owned by natives, which results in a reduction in the amount of capital per person; this goes together with the cost of new capital that is built to ameliorate the dilution. But this mechanism does not operate in the private business sector because the owners of the capital — who tend to be natives, and as a result of pension ownership fund tend to be a broad segment of the native community --receive additional income from the capital which is now used more intensively because of the immigrants. That is, immigrants receive only their *incremental* output and not the *average* output of workers in a firm, and the average output is higher than the incremental output. At the same time, natives as an aggregate — including both the workers in a firm and the owners of the capital — receive the average output of workers multiplied by the number of workers. *In short, immigrants working with native-owned capital lead to a gain rather than a loss for natives taken as a whole*.

On the other hand, if workers in a business do not share in the added capital income due to immigrants, those workers lose, because their wages are pushed down somewhat by the employment of the additional immigrants. This is the classical situation of Malthusian diminishing returns to additional labor. But when we calculate the likely extent of the effect, based on reasonable assumptions about the nature of our economy, the effect is quite small relative to the other effects of the immigrants, even if the native workers own none of the capital.

Immigrants also have a negative effect upon natives through the use of public "demographic" capital such as schools, hospitals, and public housing, because more people imply the need for additional structures. Some of this additional capital is paid for directly by the immigrants through their tax payments that repay the owners of the revenue bonds that financed the existing demographic capital. This is a pay-as-you-go system almost like rental, through which the immigrants pay a part of their fair share for the use of that capital. But some demographic capital is purchased outright by the community, a cost which immigrants impose upon natives.

There also is a negative capital effect by way of immigrants who work for government, where — unlike the case with private business capital — there are no native owners of the capital that receive the returns to that capital. But this effect is relatively small, because only about 8 percent of immigrants -- about half the percentage of natives -- work in the public sector.

Computations show that the sum of the latter two capital-dilution effects is not insignificantly small. But for perspective, it is only about one fifth as large as the positive effect of immigrants upon natives by way of their net contributions to the public coffers through taxes less welfare services used.

Added congestion in public facilities such as roads and waterways does not seem to constitute a significant cost. And there does not seem to be a negative effect upon natives' productive human capital due to association with immigrants, because the average education and skill levels of immigrants who come nowadays (as, in fact, at most times in our history) are quite comparable to the levels of natives, implying no trend toward association by natives with persons of poorer skills due to the arrival of immigrants.

According to the simplest Malthusian theory, the effect of immigrants upon natural resources and the environment must be negative. But the empirical evidence suggests that, except in the very shortest run, immigrants have a positive rather than a negative effect upon the supply of the resources and the purity of the environment, affront to common sense though that may seem. The reason is that, in response to additional demand from increased income or population growth, new solutions to resource problems are developed that usually leave us better off than if there had never been a squeeze upon the resources. This is amply demonstrated by the historical trend of increased rather than diminished availability of resources, as shown by falling long-run costs of resources, instead of the trend of increasing scarcity and higher prices that the simple Malthusian theory predicts. Pressure upon natural resources and the environment is the least persuasive argument against admitting additional immigrants.

The displacement of natives from jobs by new immigrants is, perhaps, the most dramatic and most frequently alleged impact of immigrants. But a study of the cities of the U.S., relating observed unemployment changes to the rates of immigration over a period of years, does not reveal any such large effect. The central impression left by the data is that there is either a very small effect or no observable effect at all. The simple fact is that, rather than just taking jobs away from natives from within a fixed supply of jobs, immigrants make jobs through the increased demand that they create by way of their incomes and buying power, and also by way of the new businesses that they open. The patently unrealistic assumption that the supply of jobs does not expand in response to the entry and employment of immigrants is at the heart of those models of employment effects which imply that immigrants increase native unemployment substantially.

Now let us turn to the positive economic effects of immigrants upon natives. One large benefit comes from exactly the mechanism that is popularly thought to produce a burden. Immigrants' use of welfare services is far less than that of natives, mainly because immigrants tend to arrive when they are young and just beginning their working careers. Because of their age distribution, they do not use the most expensive of the welfare services, Social Security. When they retire later on, the immigrants are supported by the Social Security payments of their grown, working children. This process produces a one-time windfall benefit to natives. And on the other side of the matter, immigrants pay more in taxes than do average native families, for exactly the same reason -- age structure. Therefore, there is a large net benefit to natives from immigration through the public coffers. The effect is even stronger for illegal immigrants because they cannot take advantage of many public services out of fear that such use will lead to their apprehension and expulsion from the U.S., though the overwhelming majority of them pay income and Social Security taxes.

Perhaps the most important benefit of immigrants comes from immigrants simply increasing the population and thereby raising productivity in industry. The additional persons have a positive effect through their boost to the volume of sales, which leads to improved productivity through learning-by-doing, as well as through other economies of size. And there is also an important positive effect through the increased supply of ingenious minds available to develop new and better ways of doing things. Even using conservative assumptions about the magnitude of this effect, the impact on productivity quickly swamps all the other effects, as the integrated simulation model shows.

An overall numerical assessment of the economic effect of immigrants upon natives may be made in two dovetailing fashions--empirical study of the population-growth experiences of various countries, and theoretical simulation. Empirically, all the studies that relate the rate of population growth to the rate of economic growth show no negative effect of the former upon the latter, whether over a long span of history for the few countries on which data are available, or for the many countries for which data are available starting after World War II. And studies of the relationship of population density to economic growth suggest that higher density leads to faster economic growth, contrary as this may be to casual thinking and common sense.

A simulation model using simple standard theory with parameter estimates derived from a variety of sources, together with an allowance for the effect of immigrants upon productivity, leads to even stronger results. The short-run negative effect is small and either very brief or not even observable, whereas the immigrants quickly make positive and large contributions to natives' standard of living. Assessed as one assesses other social investment decisions, the rate of return to natives from the "investment" of admitting immigrants is very large by any measure.

Immigrants are a good deal for natives, on balance.

FOOTNOTES

Chapter I

1. This general hostility may be misleading, however. According to R. Simon, at the same time that Americans express negative views of admitting more immigrants, they express positive feelings toward the immigrants whom they know personally. And over the years, public policy toward immigrants has been much more open to immigration than has been the expressed feeling toward immigration in the abstract. Rita Simon, *Public Opinion and the Immigrant* (Lexington, MA: Lexington Books, 1985).

2. Tom Tiede, "Aliens: Time to Snuff the Torch?" NEA Syndicated Column, 1977.

3. FAIR, fundraising letter from Roger Conner, undated.

4. Jacob S. Siegel, Jeffrey S. Passel, and J. Gregory Robinson, "Preliminary Review of Existing Studies of the Number of Illegal Residents in the United States," in *U.S. Immigration Policy and the National Interest*, Appendix E to the Staff Report of the Select Commission on Immigration and Refugee Policy, April 1981, p. 19.

5. *Ibid.*, p. 33.

6. FAIR Publication, "What is Fair?", undated.

7. From a telephone conversation with Jeffrey S. Passel, 1981, and personal conversation, Boston, March, 1985.

Chapter II

1. Manpower and Immigration, *Three Years in Canada* (Ottawa: Information Canada, 1974), pp. 55-57.

   The data are drawn primarily from a government survey that followed and reinterviewed, for three years after the date of entry, a sample of persons who entered in 1969. The study also questioned a group of Canadian residents with characteristics similar to those of the immigrants, for purposes of comparison. The survey suffers from nonresponse, as do all surveys. The findings are based on the responses of 2,037 immigrants who remained in the survey—returning all four questionnaires—for the full three years. On most questions, the report omits the views and experiences of those who chose not to respond to one or more of the questionnaires, who left Canada during the survey period, or who moved within Canada and could not be traced by mail.

The execution of the survey apparently was of generally high quality, and the findings should not be fatally flawed by the nonresponse problem.

2. *Ibid*., p. 142.

3. K. Jones and A. D. Smith, *The Economic Impact of Commonwealth Immigration* (Cambridge: Cambridge University Press, 1970), p.104.

   Jones and Smith utilized a variety of census data and other standard national data services. For income and expenditures of the New Commonwealth immigrants they drew upon sample surveys of Manchester and Birmingham by P. F. Ward and R. Padburn, respectively.

4. *Ibid*., p. 107.

5. Israeli data used here and elsewhere in this monograph are derived primarily from a follow-up study of a sample of 1,360 immigrants who arrived in 1969-70, and similar samples up through 1972, conducted by the Central Bureau of Statistics (Israel) and the Israel Institute of Applied Social Research. The survey data are supplemented by Israeli census and national-income data. This report describes the immigrants from the Soviet Union, though data on other Eastern European immigrants are used to enlarge the sample where necessary.

6. David S. North and Marion F. Houston, *The Characteristics and Role of Illegal Aliens in the U.S. Labor Market: An Exploratory Study* (Washington: Linton and Company, March, 1976), p. 142.

7. Anthony Richmond, *Factors in the Adjustment of Immigrants and Their Descendants* (Ottawa: Ministry of Supply and Services, 1980), Table 11.1, p. 362.

8. Sidney Weintraub and Gilberto Cardenas, *The Use of Public Services by Undocumented Aliens in Texas: A Study of State Costs and Revenues* (Austin: The University of Texas, 1984).

9. *Ibid*, p. xxxi.

10. *Ibid*., p. xxx.

11. *Ibid*., p. 79.

12. *Ibid*,. p. 51; this is after allowing for the roughly one-third of workers who do not pay such taxes.

13. *Ibid*., p. xxviii.

14. *Ibid*., p. 47.

15. *Ibid.*, p. 27.

Chapter III

1. Peter J. Hill, "Relative Skill and Income Levels of Native and Foreign Born Workers in the United States," *Explorations in Economic History*, 12, 1975, pp. 47-60.

Chapter IV

1. *Global 2000 Report to the President*, Vol. 1 (Washington, D.C.: U.S. Government Printing Office, 1980.

2. Julian L. Simon, *The Ultimate Resource* (Princeton, NJ: Princeton University Press, 1981); or see Julian L. Simon, *The Economics of Population Growth* (Princeton, NJ: Princeton University Press, 1977).

3. Lindsey Grant and John H. Tanton, "Immigration and the American Conscience," The Environmental Fund, reprint 1981.

4. An example: the discovery of plastics—celluloid being the first—in the mid-nineteenth century derives from a shortage of elephant tusks to make billiard balls, due to increased demand. A maker of billiard balls offered a $10,000 prize for a synthetic replacement, and celluloid was the result.

5. Julian L. Simon and Herman Kahn (eds.), *The Resourceful Earth: A Response to Global 2000* (Oxford: Basil Blackwell, 1984).

Chapter V

1. Manpower and Immigration Department, *Three Years in Canada* (Ottawa: Information Canada, 1974), p. 19.

2. *Ibid.*, p. 8.

3. K. Jones and A. D. Smith, *The Economic Impact of Commonwealth Immigration* (Cambridge: Cambridge University Press, 1970), p. 39.

4. *Ibid.*, p. 40.

5. Barry R. Chiswick, "Immigrants and Immigration Policy," in *Contemporary Economic Problems*, ed. William Fellner (Washington, DC: AEI, 1978).

6. Wayne A. Cornelius, *Illegal Migration to the United States: Recent Research Findings, Policy Implications, and Research Priorities,* (Mimeo, Center for International Studies, M.I.T., 1977), p. 5.

7. Chiswick, *op. cit.*, p. 305.

8. Sidney Weintraub and Gilberto Cardenas, *The Use of Public Services by Undocumented Aliens in Texas: A Study of State Costs and Revenues* (Austin: The University of Texas, 1984).

9. Louis Parai, *The Economic Impact of Immigration* (Ottawa: Manpower and Immigration, 1974), p. 43.

10. *Ibid.*, p. 92.

11. *Ibid.*, p. 44.

12. Jones and Smith, *op. cit.*, p. 19.

13. *Ibid.*, p. 30.

14. Cornelius, *op. cit.*, p. 6.

15. Chiswick, *op.*, *cit.*, p. 301.

16. Manpower and Immigration Department, *op.*, *cit.*, p. 142.

17. There is little reason to believe that these results are due to a single isolated event. Aside from the single individual who employed more than one hundred, and the fourteen who did not answer about the number of employees, there were two with 20-44 employees, three with 11-19 employees, five with 6-10 employees, fifteen with 3-5 employees, eight with 2 employees, and nineteen with one employee (twenty-four with no employees).

18. Jones and Smith, *op.*, *cit.*, p. 45.

19. *The Wall Street Journal*, October 10, 1978, p. 1.

20. M. Vic Villalpondo, et. al., *A Study of the Socio-Economic Impact of Illegal Aliens, County of San Diego* (San Diego: Human Resources Agency, County of San Diego, January, 1977), p. 59.

21. *Los Angeles Times*, July 3, 1975, p. IFF.

22. M. Vic Villalpondo, et., al. *op. cit.*, pp. 61-62.

23. Richard A. Easterlin, *Population, Labor Force, and Long Swings in Economic Growth* (New York: NBER, 1968), pp. 30-31.

24. Barton Smith and Robert Newman, "Depressed Wages Along the U.S.-Mexican Border: An Empirical Analysis," Economic Inquiry, vol. 15, January, 1977, pp. 56-66.

25. See David L. Birch, "The Job Generation Process," (Cambridge, MA: M.I.T., Program on Neighborhood and Regional Change, 1979).

Chapter VI

1. Robert Solow, "Technical Change and the Aggregate Production Function," The Review of Economics and Statistics, vol. 39 (1957), pp. 312-320.

2. Edward F. Denison, Why Growth Rates Differ (Washington, DC: The Brookings Institution, 1967).

3. Quoted in Amar N. Agarwala and S. P. Singh, eds., Economics of Underdevelopment: A Series of Articles and Papers (Oxford: Oxford University Press, 1963).

4. Douglas Love, "City Sizes and Prices," Ph.D. Thesis, University of Illinois, 1978.

5. Leo Sveikauskas, "The Productivity of Cities," Quarterly Journal of Economics, vol. 89 (1975), pp. 343-413.

6. William Alonso, "The Economics of Urban Size," John Friedman and William Alonso, eds., in Regional Policy Readings in Theory and Applications (Cambridge, MA: M.I.T. Press, 1975).

7. Winfield W. Riefler, Money Rates and Money Markets in the United States (New York: Harper and Brothers, 1930); Jerry Stevens, "Demographic Market Structure and Bank Performance," paper at the University of Illinois, 1978.

8. David Segal, "Are There Returns to Scale in City Size?" Review of Economics and Statistics, vol. 58 (August 1976), pp. 339-350.

9. Donald R. Glover and Julian L. Simon, "The Effect of Population Density Upon Infrastructure: The Case of Roadbuilding," Economic Development and Cultural Change, vol. 23, no. 3, April 1975.

10. Robert Higgs, "American Inventiveness, 1870-1920," Journal of Political Economy, vol. 79 (1971), pp. 661-667; Allen Kelley, "Scale Economies, Inventive Activity, and the Economics of American Population Growth," Explorations in Economic History, vo. 10 (1972). pp. 35-52.

11. Julian L. Simon and Leslie Golembo, "The Spread of a Cost-Free Business Innovation: The Case of the January White Sale," Journal of Business, vol. 40 (October 1967).

12. William Petty, Another Essay in Political Arithmetic (1682) in The Economic Writings of Sir William Petty, Charles H. Hull, ed., (Cambridge: Cambridge University Press, 1899), p. 474.

13. Simon Kuznets, "Population Change and Aggregate Output," In Universities - National Bureau of Economic Research, Demographic and Economic Change in Developed Countries (Princeton: Princeton University Press, 1960).

14. The Wall Street Journal, date unknown.

15. Reference lost or missing.

16. Hans A. Bethe, "The Necessity of Fission Power," Scientific American, vol. 234 (January 1976).

17. Edward F. Denison, Why Growth Rates Differ (Washington: The Brookings Institute, 1967).

18. Solow, op. cit.

19. Ibid.

20. William Fellner, "Trends in the Activities Generation of Technological Progress," American Economic Review, 1970, vol. 60, pp. 1-29.

21. Derek de Solla Price, "Measuring the Size of Sciences," Israel Academy of Sciences and Humanities Proceedings 4: no. 6, 1967; Derek de Solla Price, "Some Statistical Results for the Numbers of Authors in the States of the United States and the Nations of the World," in Who Is Publishing in Science (Philadelphia: Institute for Scientific Information, 1975), pp. 26-35; Douglas Love and Lincoln Pashute, "The Effect of Population Size and Concentration Upon Scientific Productivity," in Julian L. Simon, ed., Research In Population Economics, vol. I (Greenwich, Conn.: JAI Press, 1978).

22. William H. McNeill, The Rise of the West (New York: Mentor, 1963); Eric L. Jones, The European Miracle (Cambridge: Cambridge University Press, 1981).

23. V. Gordon Childe, What Happened in History (Baltimore: Penguin, 1942).

Chapter VII

1. Ronald Lee, "Economic Consequences of Population Size, Structure and Growth," International Union for the Scientific Study of Population Newsletter, January, 1983, p. 54.

2. David Morawetz, "Twenty-five years of Economic Development," Finance and Development, September, 1977.

3. Everett E. Hagen, The Economics of Development (Homewood, IL: R. D. Irwin, 1975).

4. Charles P. Kindleberger, Economic Development (New York: McGraw-Hill, 2nd edition, 1965).

5. Julian L. Simon and Roy Gobin, "The Relationship Between Population and Economic Growth in LDC's," in Simon and da Vanzo, eds., Research in Population Economics (Greenwich: JAI Press, 1979).

6. J. Dirk Stryker, "Optimum Population in Rural Areas: Empirical Evidence from the Franc Zone," The Quarterly Journal of Economics, vol. XCI (May 1977), pp. 177-193.

7. Julian L. Simon, "The Really Important Effects of Immigrants Upon Natives' Incomes," in Barry Chiswick (ed.), The Gateway (Washington: American Enterprise Institute, 1982).

8. R. Albert Berry and Ronald Soligo, "Some Welfare Aspects of International Migration," Journal of Political Economy, vol. 77 (Sept./Oct., 1969), 778-794.

Chapter VIII

1. Andrew M. Greeley, "Immigration and Religio-Ethnic Group: Sociological Reappraisal," in Barry Chiswick (ed.), The Gateway (Washington: American Enterprise Institute, 1982); Ethnicity, Denomination, and Inequality (Beverly Hills, CA: Sage, 1976).

2. Peter J. Hill, "Relative Skill and Income Levels of Native and Foreign-born Workers in the United States," Explorations in Economic History, 12, 1975, pp. 47-60.

3. See Jagdish Bhagwati, ed., The Brain Drain and Taxation (Amsterdam: North-Holland, 1976), for references to literature.

4. Robert Goldberg, Oli Havrylyshyn, and Stephen Mangum, Can Remittances Compensate for Manpower Overflows? The Case of Phillippine Physicians, xerox (1984).

5. Don Patinkin, The Israel Economy: The First Decade (Jerusalem: Falk, 1959), p. 76.

6. A. H. Hawley, "Population and Society: An Essay on Growth," in S. J. Behrman, L. Corsa, and F. Freedman, eds., Fertility and Family Planning (Ann Arbor: University of Michigan Press, 1969), p. 201.

7. U.S. Statistical Abstract, 1981, p. 429.

8. Population Reference Bureau Data Sheet, 1977.

9. In my judgment, based on prices in the various countries as well as on the quantities of household durables owned, U.S. per-person income is considerably above that in any other country, including Switerzerland and Sweden. And U.S. productivity is even higher, relatively, once labor-force participation and hours worked per year are allowed for. Also, there may well be countries in Africa that are considerably poorer in a general way than is war-torn Cambodia.

10. U.S. Statistical Abstract, 1982, p. 865.

11. Los Angeles Times, "Immigration in the Era of Limits," Feb. 17, 1980, p. 5.

12. Garret Hardin, no further reference found.

13. The Wall Street Journal, November 30, 1981, p. 23.

14. The Wall Street Journal, September 8, 1981, p. 46.

15. The Wall Street Journal, March 24, 1982, p. 28.

16. The Wall Street Journal, September 24, 1982, p. 25.

17. Rita J. Simon, Public Opinion and the Immigrant (Lexington, MA: Lexington Books, 1985).

BIBLIOGRAPHY

William Alonso, "The Economics of Urban Size," John Friedman and William Alonso (eds.) in *Regional Policy Readings in Theory and Applications* (Cambridge: M.I.T. Press, 1975).

Jagdish Bhagwati (ed.), *The Brain Drain and Taxation* (Amsterdam: North-Hollard, 1976).

R. Albert Berry and Ronald Soligo, "Some Welfare Aspects of International Migration," *Journal of Political Economy* 77:778-94, Sept./Oct., 1969.

H. A. Bethe, "The Necessity of Fission Power," *Scientific American*, 234, No. 1 (January, 1976).

Francine D. Blau, "Immigration and Labor Earnings in Early Twentieth Century America," Volume 2, Julian L. Simon and Julie daVanzo (eds.), *Research in Population Economics*, (Greenwich: JAI Press, 1979).

Barry R. Chiswick, "Immigrants and Immigration Policy," in *Contemporary Economic Problems*, William Fellner, ed. (Washington: AEI, 1978), pp. 285-325.

Wayne A. Cornelius, "Illegal Migration to the United States: Recent Research Findings, Policy Implications, and Research Priorities," Mimeo, Center for International Studies, M.I.T., May, 1977.

Edward F. Denison, *Why Growth Rates Differ*. (Washington: The Brookings Institute, 1967).

Richard A. Easterlin, *Population, Labor Force, and Long Swings in Economic Growth*. (New York: NBER, 1968).

Paul Ehrlich, fundraising letter for Zero Population Growth, arrived October 22, 1982 (for quote "The United States in less than 50 years...").

H. S. Ellis, "Are There Preferable Alternatives to International Migration as an Aid to Economic Development?" in *Economics of International Migration*, B. Thomas, ed. (London: Macmillan, 1958), pp. 347-361.

Walter A. Fogel, "Illegal Aliens: Economic Aspects and Public Policy Alternatives," *San Diego Law Review*, Vol. 15, December 1977, 63-78.

Everett E. Hagen, *The Economics of Development*. (Homewood: Irwin 1975).
A. H. Hawley, "*Population and Society:* An Essay on Growth," in *Fertility and Family Planning*, S. J. Behrman, L. Corsa, and F. Freedman, editors (Ann Arbor: University of Michigan Press, 1969), pp. 189-205.

Robert Higgs, "American Inventiveness, 1980-1920." *Journal of Political Economy* 79:661-67, 1971.

Julius Issac, *The Economics of Migration*. (London: Routledge, Kegan and Paul, 1947).

K. Jones and A. D. Smith, *The Economic Impact of Commonwealth Immigration* (Cambridge: CUP, 1970).

Charles B. Keely and Ellen P. Kraly, "Recent Net Alien Immigration to the U.S.: Its Impact on Population Growth and Native Fertility," talk to PAA, 1978.

Allen Kelley, "Scale Economies, Inventive Activity, and the Economics of American Population Growth," *Explorations in Economic History*, 10:35-52, 1972.

Charles P. Kindleberger. *Economic Development*, 2nd edition. (New York: McGraw-Hill, 1965).

H. Leibenstein, "Allocative Efficiency vs. 'X-Efficiency'," *American Economic Review*, LVI, June, 1966, pp. 392-415.

Douglas Love, "City Sizes and Prices," Ph.D. Thesis (University of Illinois, 1978).

Manpower and Immigration, *Three Years in Canada* (Ottawa: Information Canada, 1974).

David Morawetz, "Twenty-five Years of Economic Development," *Finance and Development*, September, 1977, p. 11.

David S. North and Marion F. Houston, *The Characteristics and Role of Illegal Aliens in the U.S. Labor Market: An Exploratory Study* (Washington: Linton and Company, March, 1976).

Ragnar Nurkse, "Growth in Underdeveloped Countries," *America Economic Review*, May, 1952, reprinted in A. N. Agarwala and S. P. Singh, *The Economics of Underdevelopment* (New York: Oxford, 1963), p. 20.

Louis Parei, *The Economic Impact of Immigration* (Ottawa: Manpower and Immigration, 1974).

Don Patinkin, *The Israel Economy: The First Decade* (Jerusalem: Falk, 1959).

William Petty, *Another Essay in Political Arithmetic* (1682) in *The Economic Writings of Sir William Petty*, Charles H. Hull, ed. (Cambridge: CUP, 1899), p. 474.

Derek de Solla Price, "Measuring the Size of Sciences," *Israel Academy of Sciences and Humanities Proceedings* 4: No. 6, 98-111, 1967.

Derek de Solla Price, "Some Statistical Results for the Numbers of Authors in the States of the United States and the Nations of the World," pp. 26-35 in *Who Is Publishing In Science* , 1975 (Philadelphia: Institute for Science, 1975).

Djavad Salehi-Isfahani, "Ester Boserup Revisited: Population Growth and Intensification in Iranian Agriculture," *IUSSP Paper No. 6 - Agrarian Change and Population Growth*, Liege, 1976.

David Segal, "Are Their Returns to Scale in City Size?" *Review of Economic Statistics*, 58, August, 1976, 339-50.

Julian L. Simon, "Additional People Improve the Standard of Living Through Knowledge, Creation, and Productivity Increases," Testimony given to Select Committee on Population of the U.S. House of Representatives, June 2, 1978b.

Julian L. Simon, "The Economic Effect of Russian Immigrants Upon the Veteran Israeli Population: A Cost-Benefit Analysis," *The Economic Quarterly*, 23, August, 1976, pp. 244-253 (in Hebrew).

Julian L. Simon, *The Economics of Population Growth* (Princeton: Princeton University Press, 1977).

Julian L. Simon, "The Effect of Population Growth on Agricultual Saving in Irrigation," *Review of Economics and Statistics*, Volume LVII, February, 1975, pp. 71-79.

Julian L. Simon, "Immigrants Don't Cost, They Pay," talk to Population Association of America, April, 1978.

Julian L. Simon, "A Policy to Promote the World's Economic Development with Migration from LDC's to MCD's," *Policy Sciences*, Volume 5, September, 1971, pp. 110-113.

Julian L. Simon and Roy Gobin, "The Relationship Between Population and Economic Growth in LDC's," in Simon and daVanzo, eds. *Research in Population Economics*, Vol. 2, (Greenwich, Conn.: JAI Press, (1979).

Julian L. Simon and Leslie Golembo, "The Spread of a Cost-Free Business Innovation: The Case of the January White Sale," *Journal of Business*, Volume 40, October, 1967, pp. 385-388.

Julian L. Simon and Larry Neal, "Births, Migrants, Productivity, and Growth in the Western World," State Department - Hudson Institute Conference, January, 1979.

Barton Smith and Robert Newman, "Depressed Wages Along the U.S.-Mexican Border: An Empirical Analysis," Economic Inquiry, XV, January, 1977, pp. 56-66.

Robert Solow, 1957. Technical Change and the Aggregate Production Function. The Review of Economics and Statistics, 39:312-20.

J. J. Spengler, "The Economic Effects of Migration," in Selected Studies of Migration Since World War II, F. G. Boudreau and F. G. Kiser, ed. (New York: Milbank Memorial Fund, 1958).

Jerry Stevens, "Demographic Market Structure and Bank Performance," paper at the University of Illinois, 1978.

J. Dirck Stryker, "Optimum Population in Rural Areas: Empirical Evidence from the Franc Zone," The Quarterly Journal of Economics, Volume XCI, May, 1977, No. 2, pp. 177-193.

Leo Sveikauskas, "The Productivity of Cities," Quarterly Journal of Economics, 89, 1975, pp. 343-413.

Tom Tiede, "Aliens: Time to Snuff the Torch?", NEA Syndicated Column, 1977.

Dan Usher, "Public Property and the Effects of Migration Upon Other Residents of the Migrants' Countries of Origin and Destination," Journal of Political Economy, Volume 85, 1977, pp. 1001-1026.

M. Vic Villalpondo, et al., A Study of the Socio-Economic Impact of Illegal Aliens, County of San Diego (San Diego: Human Resources Agency, County of San Diego, January, 1977.